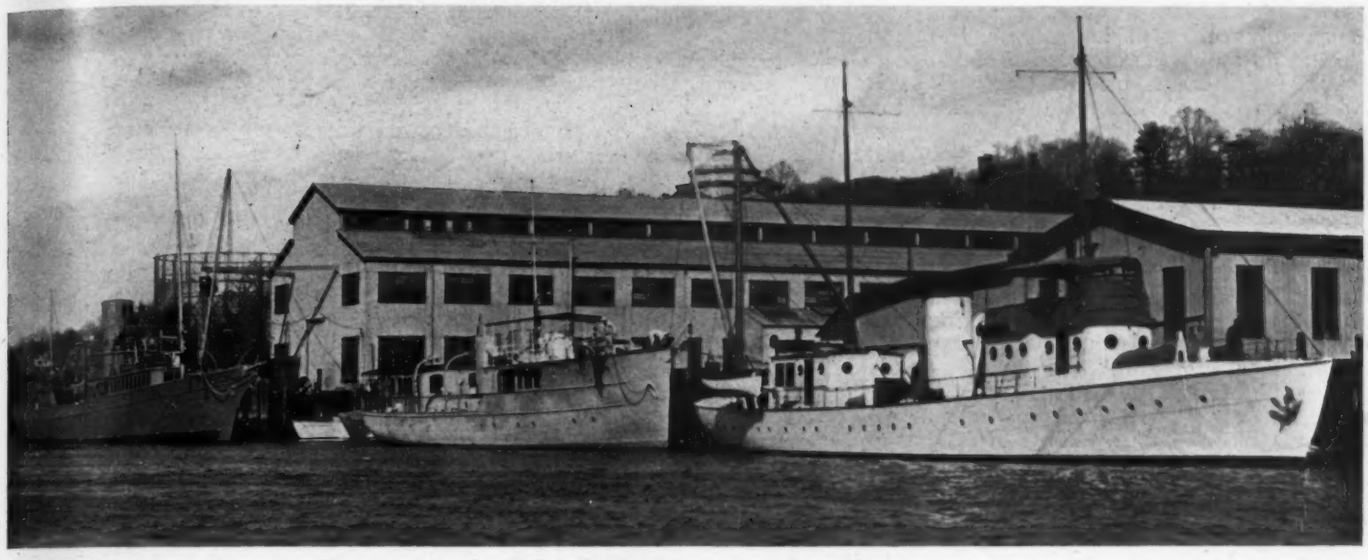
YACHTING

VOLUME XXI, NUMBER V — MAY, 1917 — 15 Cents a Copy $1.75 a year



THE STEAM YACHT KANAWHA AND THE MOTOR YACHTS SABLO AND TARANTULA ARE NOW BEING CONVERTED FOR USE IN THE COAST PATROL FLEET

The War and Its Relations to Yachting and Yachtsmen

FOR the first time in nineteen years this country is at war with a foreign power and for the first time in fifty-six years it is involved in a war which calls for the co-operation of all of the people and which may tax all the resources of this great country. The issue was clear cut and decisive, the wrong to us and to humanity was great, the reluctance with which the President and Congress declared hostilities was apparent, yet there was no other way out. Already the machinery of the Navy and War Departments, which we described in our last issue, is in operation building up the military arms of the government, and it's up to us who are particularly interested in the sea and in boats not only to see what we can do to help, but to weigh matters carefully and see just what effect hostilities will have on us, personally, and on the sport which means so much to all of us.

The first six months, or even a year must be devoted chiefly to preparation, unless Germany finds some way of attacking us, which she might do by a spectacular U-boat raid on American shipping off our coasts, or by sporadic attacks on our coasts, such as that of Scarborough, which would have no military value. In this preparation every boat-sailor will do his part, we feel sure; for it is those very qualities in a yachtsman that go to make him a good sailor that will make him be the first to "do his bit" whatever it may be and make him of most use afloat, if that is where the government can best use him, or ashore if necessary.

The Naval Coast Defence Reserve is probably the branch of the Navy in which most amateur sailors will enroll, while the regular Naval Reserve (Class 2) is the branch into which most of the licensed officers of the larger yachts and merchant steamers will go. Full details of enrollments in the Naval Coast Defence Reserve have been published in the March and April numbers of YACHTING, but it may be well to repeat them here in condensed form.

Class 4, the Naval Coast Defence Reserve, is a Naval District proposition. The Commandant of each district has authority under Class 4 to enroll anybody who would be useful on the war slate in his Naval district. It embraces patrol boats, civil engineers, structural engineers, mechanical engineers, etc., anybody in fact whose services the Commandant would need in various parts of the district but the main object of this class it to help to secure a sufficient number of patrol boats properly manned and equipped.

When a man enrolls in the Naval Reserve he signs up for four years, and during that time he is subject to immediate call in time of war, or in case of emergency. That is the principal reason why the Government wants men to enroll in the Naval Reserve; to stand by in case of national need. It is necessary in order to be confirmed in whatever rank or rating is given when you are enrolled, that you get in three months' active duty. This active duty is not required, but is necessary if you are to render useful service. Many men could enroll in the Reserve today who need not get into active duty, but who would be of great use in case they are all called out in time of war. The inexperienced men who come in though should if possible get in some active duty at least from two to three months if they can conveniently.

In time of peace, the law says a man can resign from the Reserve and his resignation shall be accepted, not may be, but shall be.

In regard to pay in the Naval Reserve, it is exactly the same as a man of similar rank or rating in the Navy and with the same length of service. In addition, you are given at first a retainer pay of $12 a year, but if you have been confirmed in your rating after three months' active duty the retainer pay then is in accordance with the rating that you are in. In the case of seamen, the retainer pay, instead of being $12, after you have been confirmed would be about $48 and so on up.

There is one thing in particular to impress on your minds—do not hang back and be satisfied with the idea that if war comes you are going to come right to the front for you will only be doing what a great many others are doing, and it is going to take time to get you enrolled and time to get you into proper places. If you hang back and wait until war is declared things are going to be confused and your procrastination and delay will be the chief cause of the confusion.

At present a course of study is being drawn up for each rating and the Government intends to list the books that you need in order to get this information; and tell you where you can get them; and what they cost. Nine-tenths of it may be learned by individual application and experience, while the other tenth, or a little bit less, of the time you should have some lectures as a guide merely.

THE EXPRESS CRUISER WILL HAVE HER WORK CUT OUT FOR HER THIS SUMMER FOR SCOUT AND PATROL STATION MORE THAN UPON EXTREME SPEED. THIS 52-FOOT SCOUT BOAT IS A GAS ENGINE AND POWER CO. & C. L. SEABURY CO. CONSD., AND IS AN ABLE, HUSKY CRAFT, OF 17½ FT. BEAM, SELF-FEEDING, WITH BUNK ROOM FOR FOUR DAYS OR OVER AND WITH A SPEED OF FROM 20 TO 24 MILES, DEPENDING ON THE POWER

As yet, while men have enrolled and in many places are under instruction, the patrol fleet has not been mobilized, though it may be at any time. While the government has details of and holds contracts on many boats, it has not taken over a great number and it is doubtful if it will take over those not specially suited to its needs unless forced to do so by the appearance of the enemy off the Coast, preferring to wait until its own 110 or 120-footers (now building) are completed.

One of the difficulties in enrolling is that the big centres of population, such as New York, Boston, Philadelphia, and the like, attract most of the men and most of the boats, as, naturally, men prefer to serve in their home waters. This leaves some of the other districts short of both boats and men and it would be wise if those desiring to enroll would get in touch with the Commandants of some of the other districts, such as the Fifth District, with headquarters at Norfolk, Va., the Sixth with headquarters at Charleston, S. C., etc., while the Pacific coast will probably also need men and boats.

Here's a Chance to Help Out With Boats

While many boats have been offered to the government for use in the patrol and scout fleet, it is natural that most of these have been offered to the Second District, with headquarters at Newport, the Third, New York, and Fourth Districts at Philadelphia, as these are the principal yachting centers where most of the yacht owners reside. Some of the other Districts are every bit as important as the three just mentioned, particularly the Fifth District with headquarters at Norfolk which takes in the entrance to the Chesapeake Bay, with the Portsmouth Navy Yard, the big dry docks, and with a trade to Europe, equal to that of New York. It is probable if a submarine attack is made on the coast it will be particularly active off the Virginia Capes: yet the Fifth District as well as some of the others suffered from lack of proper boats.

Up to the present the Government has not taken over a large number of yachts except those that were especially suited to its needs or those that were donated or loaned for a nominal sum, although it holds contracts with many owners for the purchase or charter of their boats. The Government is not loading itself up with a lot of boats that it will not have need for when the new 110-footers are out, but it does want to charter boats in the interim, and above all it wants boats in some of the districts away from the yachting centers. Unless the distribution is handled through a control department at Washington, some districts are going to fare better than others. The need is keen, however, for boats for the coast defence patrol and many types of craft above 40 feet in length could be used if offered for charter by their owners.

The Navy Department already has the details and has appraised many available yachts and power boats but in many cases the terms offered by it have not been satisfactory to the owners. The Department on its side should not hesitate to make fair compensation for the boats it takes.

Here is a chance for yacht owners to be of real service by enrolling their boats in some of these other Districts, or for some patriotic Americans to buy boats that will be suitable for the patrol fleet and offer them to the Government. If the Government accepts such boats it agrees to return them at the end of the charter period in as good order as when it was received, an appraisal board with representatives of the owner on it deciding as to depreciation, just what is necessary to restore the boat to its original condition, etc.

YACHTING will be glad to put any public spirited citizens in touch with some boat that will be suitable for the needs of these other important stations.

BLUECOAT IS A NEW CRAFT BUILT FOR THE NEW YORK POLICE DEPARTMENT FOR HARBOR PATROL BY THE GAS ENGINE & POWER CO. AND C. L. SEABURY CO., CONS.

Keep Up Your Yachting

While all of these preparations are going along, it does not seem that yachting or sailing need in any way cease, except where the boats are located on waters that happen to be restricted by the government, and it is not the government's intention or desire to have these boats laid up and out of commission during the summer season. In other words, they have, so far, encouraged the use of yachts and pleasure boats this summer, believing that in this way many men if they apply themselves can acquire a much more general knowledge and would thus be of greater use later on, on board a boat, than by getting instructions ashore or from books. A man needs the theoretical and book part of it also, but he can put this into practice much better on board a boat than ashore.

One of the officers of the Naval Academy at Annapolis summed up the situation when, in speaking of the proposal to give up all athletic schedules, he stated that it was laudable but misdirected enthusiasm. Both the military and naval schools are carrying out their athletic programs this spring as usual and we think that unless the situation develops so as to make great sacrifices necessary, it is the part of wisdom to keep up our yachting just as much as possible, to carry out our racing schedules unless there is definite need of abandoning them and in this way make yachtsmen even more fit for service later when they may be needed.

This applies to those that are enrolled and not yet mobilized as well as to those who have not enrolled and who for one reason or another cannot and should not do so.

The Government has recently announced certain restricted areas which probably means that these waters will be mined, but, as yet, they have not affected the yachting centers, such as Marblehead, Long Island Sound, Upper Chesapeake Bay, or the Lakes. In another column will be found these restrictions as at present announced for the principal yachting centers and it will be seen how little these interfere with general boating while, in many cases the senior officers of the Patrol will have considerable latitude in allowing the passage of small craft even within the defensive areas.

We feel sure that the yachtsmen of the United States will respond just as loyally to the call as did those of Canada and England when the war broke out, but until they are actually needed or until the waters are unsafe, there is no reason why they should be going around in sackcloth and ashes when they would be much better off on the water endeavoring to make themselves more proficient than in keeping their boats hauled out and under cover.

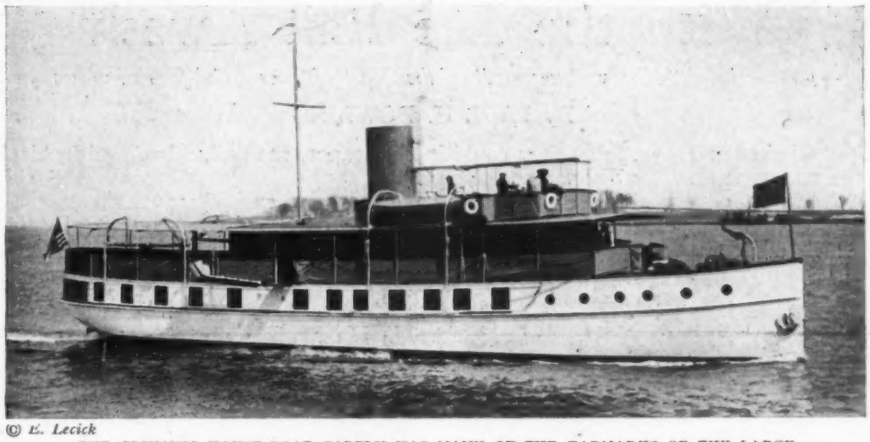
© E. Levick
THE MAIN CABIN HAS A HOMELIKE CHARM SELDOM FOUND ABOARD OUR FINEST YACHTS

THE DINING SALOON IS FINISHED IN LIGHT COLORS AND BEAUTIFULLY FURNISHED

Gadfly, a Cruising House Boat that is Different

This craft was built for Robert K. Cassatt, Esq., of Philadelphia, from designs by Messrs. Gielow & Orr, 52 Broadway, New York City, and built by Kyle & Purdy, at City Island. She is constructed of wood in a thoroughly substantial manner, and her principal dimensions are as follows: length overall, 107 feet, 3 inches; length on load waterline, 101 feet 6 inches; beam, under guards, 20 feet, 6 inches: and she has a draft of 3 feet, 6 inches when fully loaded.

In appearance the craft bears a very close resemblance to a large, beamy motor yacht, the only noticeable difference being the square windows instead of the usual circular air ports. The lines are a combined perfection of seagoing qualities, with a minimum draft, and if it were not for the square windows, she would show all the characteristics of a seagoing motor yacht. These windows, however, add much to the owner's comfort both in regard to light and ventilation, and the fact that the yacht is to be used in Florida waters, it was deemed best to use them instead of the very much smaller circular air ports.

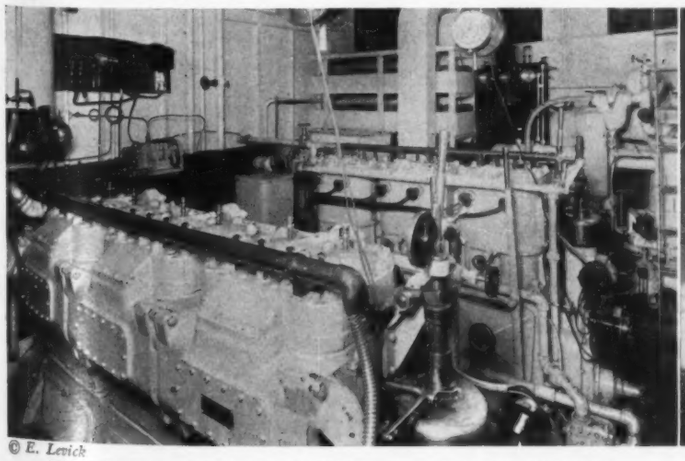


© E. Levick
THE CRUISING HOUSE-BOAT GADFLY HAS MANY OF THE EARMARKS OF THE LARGE BEAMY MOTOR YACHT

The interior finish of the boat is in panel work. The owner's and guests' quarters are in the after part of the vessel, consisting of two large and three smaller staterooms. The two large rooms each have a floor space of over 160 square feet and each will be fitted with twin brass bedsteads, upholstered transom with locker under same on each side, a bureau and dressing table with mirrors, large wardrobe on the starboard, and on the port side a bathroom, with door connecting the staterooms. The three smaller staterooms connect with two complete bathrooms. Each of these rooms is fitted with a bureau, wardrobe, and upholstered seat with locker under same.

Forward of the engine is a large galley, full width of the vessel, equipped with range, dish racks, sink, dresser, and an unusually large ice box. Dumbwaiter

(*Concluded on page 301*)



© E. Levick
THE PROPELLING MACHINERY CONSISTS OF TWIN WINTON MOTORS OF 75 H.P. EACH

BESIDES SEVERAL SINGLE STATE ROOMS THERE ARE ALSO TWO BEAUTIFULLY FURNISHED APARTMENTS FOR THE OWNER AND GUESTS

AVALON HARBOR ON SANTA CATALINA ISLAND, IS ONE OF THE SHOW PLACES ON THE WESTERN COAST

With the Lee Rail Awash

A Winter Cruise to the Isle of "Always Summer," off the Coast of Lower California, where one forgets his cares.

By PAUL H. DOWLING

IT was a full jitney-bus that coughed and spluttered away from the grocery store in San Pedro, bound for the South Coast Yacht Club mooring with the Seamore's crew of six and supplies which even the grocer admitted ought to last a week. Aside from the fact that the jitneur took the wrong road and had to be lifted across two railroad tracks and a ton of harbor filling, the preliminary journey was successfully completed.

When the groceries had been stowed away under the two forward bunks, half the crew spent all of the morning tinkering with the pump to the water tank, while the other half became exasperated at the "wheezy old contraption" and chugged over to the dock in the Club launch, bringing aboard as much water as they could in the teapot, the pail, the dishpan and two kettles.

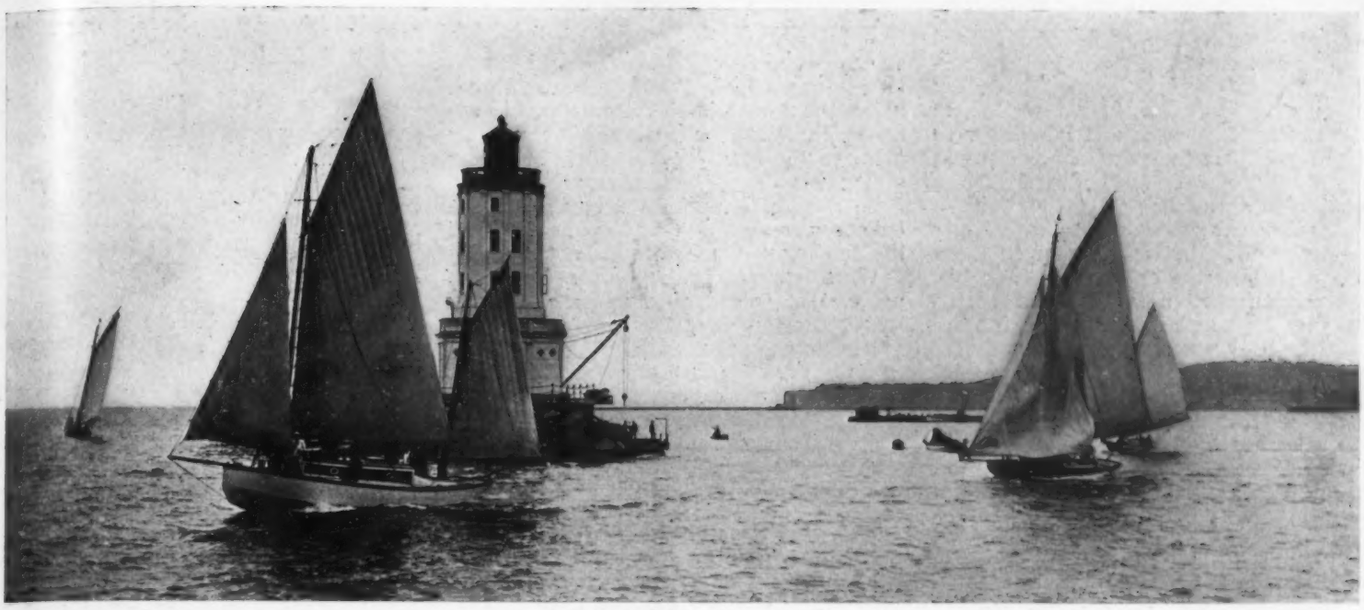
Somebody must have become excited when, later, the Skipper ordered the sails run up, for the jib and throat halyards fouled in some unaccountable fashion, necessitating Skipper's going aloft to have it out with the ropes—a mere trifle for that dauntless pilot. The yawl (I have omitted to mention the fact that Seamore was a yawl of the deadrise or V-bottom variety), had a free run down to the breakwater, where Tar, Ford and Patrick heaved and tugged to trim jib, main and jigger down tight for a close point, as the thirty-eight-footer headed for Santa Catalina, the "Isle of Summer."

Down below, Chalmers lay flat on his back with his legs braced up in the air against the side of the cabin, the only position that seemed at all comfortable to them in their swollen and sunburned condition. At the same time the other members of the crew draped themselves more or less artistically along the decks on their dinners.

When the cruiser came about on the other tack well out from San Pedro light, she lay over beautifully with the seas smashing under her lee bow and with an echoing dash in front of the little skiff which trailed along behind. A haze hung over the hills lying between the harbor and Redondo, while the island twenty miles distant stood out but faintly above the stretch of vivid blue sea. After two more tacks we could

THE CLOSE PROXIMITY TO THE WATER CREATES AN INTIMATE ACQUAINTANCE WITH THE SEA THAT IS HALF THE CHARM OF SMALL BOAT SAILING

WHEN THE BOAT LIES QUIETLY AT ANCHOR, ONE IS MYSTIFIED BY THE SOLITUDE AND WEIRDNESS OF THE COVES OF SANTA CATALINA



SEAMORE, WITH JIB, MAIN AND JIGGER TRIMMED FLAT, PASSING THE BREAKWATER, OUTWARD BOUND FOR SANTA CATALINA, THE ISLE OF SUMMER

just lay the Isthmus at the Northwest end of Catalina, while we watched the Arrow, the Companero and a motor boat speeding along the line of the horizon on the direct run to Avalon. Tar and Patrick had stretched themselves on the after deck on pillows from the cabin and in ten minutes the gentle rise and fall of the boat, together with the rays of warm sunlight, produced their slumber-compelling effect.

The creaking of the spars, the whistling of the wind in the shrouds, an occasional crash as the boat walloped a roller with bow high in the air, the dozing in the sun, propped up against the back of the deck-house, the stories and the idle chatter, the goings and comings from the galley with grapes, crackers, pears and 'wieners,' the hard push against the tiller, all these mingled to furnish sensations of the fullest joy.

The Seamore dropped out of the good breeze into a calm just off the Isthmus on Catalina Island and after a prolonged beat back and forth between Bird and Ship rocks, made her mooring just at moonrise. Standing idly on the deck, a beautiful picture was framed between the deck-house and the main boom, a picture in which there was a yellow moon in a purple bank of sky, throwing its ribbon of golden light down over a hillside of deep brown, thence in glittering ripples over a purple sea, a sea which changed to black as the moon rose higher and the light-ribbon widened and spread over the entire harbor. A flying fish, its wings flashing gold in the moonlight, and music from victrolas and ukuleles on the yachts anchored close by, lent enchantment to the scene.

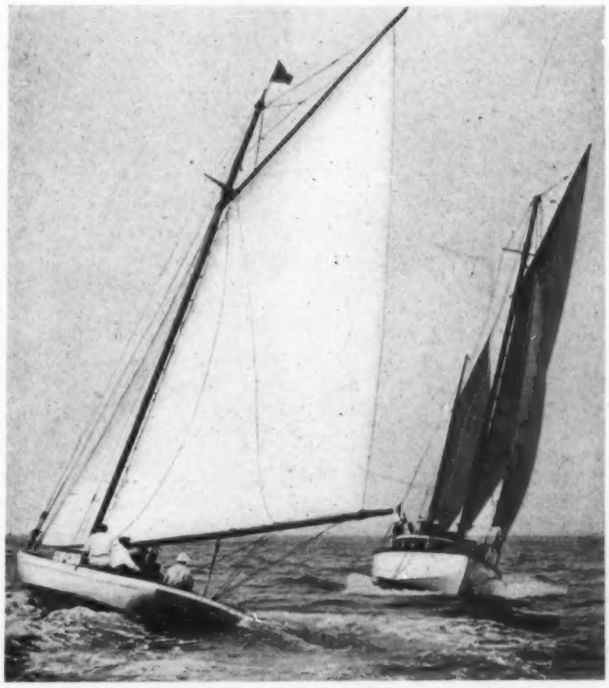
At seven-thirty the next morning streams of sun through the portlights gave notice that it was swim-time in the morning tub, a bathing place which is as big as all outdoors and which you enter by leaping over the rail. Breakfast of fried eggs and bacon, bread and coffee topped off instead of begun with cantaloupe, agreed most excellently with the appetites acquired in the "tub."

Paddling close in-shore in the skiff was fascinating amusement, for where the rocks drop off into twenty feet of water you can look down on beds of greenish kelp waving up from a bottom of amethyst sand, over which are swimming a dozen gold-fish and a school of thousands of mackerel. The cliffs are battered and scarred by the weather, leaving caves and spits all along the shore. The Isthmus harbor, where landing without special permit is prohibited, as at all other Catalina coves except Avalon, is still preserved in its primeval picturesqueness and charm. Nowhere is there clearer water and nowhere is the charm of the sunset over the water and back of the varicolored hills so great. To appreciate the beauty of the brown hills requires time, but when one has accustomed his eyes to the color scheme of the sunlight on the brown and barren hills, he will much prefer it to the green of his native hills.

Hauling in the hundred-pound hook at noon, we loafed around past Fourth of July Cove to Cherry Cove for a swim before running down to Avalon near the southwest end of the Island. Here you may float for an hour or so without a ripple breaking into your eyes, so smooth and unruffled is the water.

"Big Oley," the ballooner, was already in stops, so we ran him up as a jib. When Oley bellied out and caught the breeze, we ran up the spinnaker on its boom. When the light sails began to pull, the yawl leaped forward to seven and a half knots, and we ran down past Long Point, Buttonshell Beach and White's Landing to Avalon, where a hundred craft of all kinds were lifting on the easy swell. The omnipresent moving picture camera was at work, mounted on a fishing tug and shooting at a camera-queen who tore along behind on a surf board. The glass-bottom boats were all out, their passengers peering down through fifty feet of water where a lithe and brown-skinned diver swam easily among the strands of kelp, gathering abalone shells which most of the tourists sagely suspected were already polished and planted there on the bottom of the sea for their benefit.

After an evening and morning ashore spent in seeing Avalon, its



WE SAILED THROUGH THE WAKE OF MISCHIEF II WHILE ON OUR WAY OUT

palm-bordered villas and its excursion resorts, at noon next day the Seamore slipped out of the crescent-shaped cove called a harbor, which is entirely open on one side, on tiny puffs of wind, finally standing way off shore into a freshening breeze and lying over so far on the inshore tack that the five-pound coffee can dropped off the shelf into a bucket of water, filling the galley with a rich brown substance that was neither water nor coffee, but which slopped down and ran all over the cabin floor. All this, however, is forgotten in the sport of the sail as the boat gets into the true wind and bucks the heavy seas. Jack climbs to the mast head and Patrick squats on the bowsprit, being dipped into the seas at occasional intervals when the ship plunges a little farther than usual. But the yawl drops out of the stiff breeze at five p. m. and glides into Buttonshell Beach, where a gay launch party of girls from Avalon has preceded her. The crew eats dinner on board and joins the shore party just in time for watermelon. As the moon comes up, three belated hunters, who have been out after wild goats since early morning, arrive, clamoring for food. When the moon mounts higher, the wood is piled on the camp fire and the girls sing to the strumming of their Hawaiian "ukes." This is surely the life!

In the morning Jack is ashore long before anybody else is up, roaming somewhere over the top of the ridge.

There is something haunting and mystic about these coves which grips you with its spell. As the boat is lying inside at its mooring, rocking gently with the swell, no other human thing is in sight. That is the principal charm of the coves on Santa Catalina. The air of weirdness and of solitude might seem to be that of a far-away island of the South Seas, and when you beach the skiff and fasten the painter to a rock you do it with the air of an original explorer.

Next day comes the beat along shore to Johnson's Cove, lying six miles from the Isthmus and half way from that point to the West end of the island. Johnson's is distinguished by a solitary, wide-spreading tree, standing in the middle of a long beach reached by holding a course well clear of the outcropping rocks and a jagged point of land on the western side. Once the anchor is dropped in the clear water, you can swing free in the light breeze which nearly always comes down from the hills back of the anchorage.

A Japanese fishing tug is lying alongside, and as it is now six p. m. we shout across to see if we can buy enough fish for a meal for our hungry crew. The Japanese cuts off a huge slice of albacore, two or three pounds perhaps, and we row over to get it. The fisherman refuses pay, so, finding the resulting fish dinner delicious to the jaded palate, we insist on giving the fisherman a can of milk, a box of flapjack flour and a tin of sliced pineapples.

At one o'clock on the following day the water outside the anchorage seems to be disturbed by a good breeze, so our Skipper orders the cable shortened and the hook got on deck for a fast run across the channel. The day is remarkably clear, the mainland stands out vividly as seen from the island, twenty-one miles distant. When out from under the shore a short distance we can see Santa Barbara Island, lying thirty miles or more to the Northwest. When well clear of the island and with a strong breeze a little abaft the beam, we break out the ballooner, and "Big Oley" pulls for dear life, hauling us along at eight knots.

When you are sailing on a liner, the pleasure of the air, sea and motion may soon begin to pall and you may find yourself in an hour or so looking for magazines or a partner for a card game. But it is not so on a small sailing boat. Perhaps it is the close proximity to the water and a sort of intimate companionship thus engendered with each succeeding wave which obviates the desire for any external amusement or occupation.

It is now Ford and Jack's turn to cook luneh and as the end of the cruise is in sight they delve into the farthest recesses and dig up everything that is left, two cans of tomatoes, one of tuna and one of spaghetti, half a dozen ship's biscuits, bouillon and a pot of chocolate.

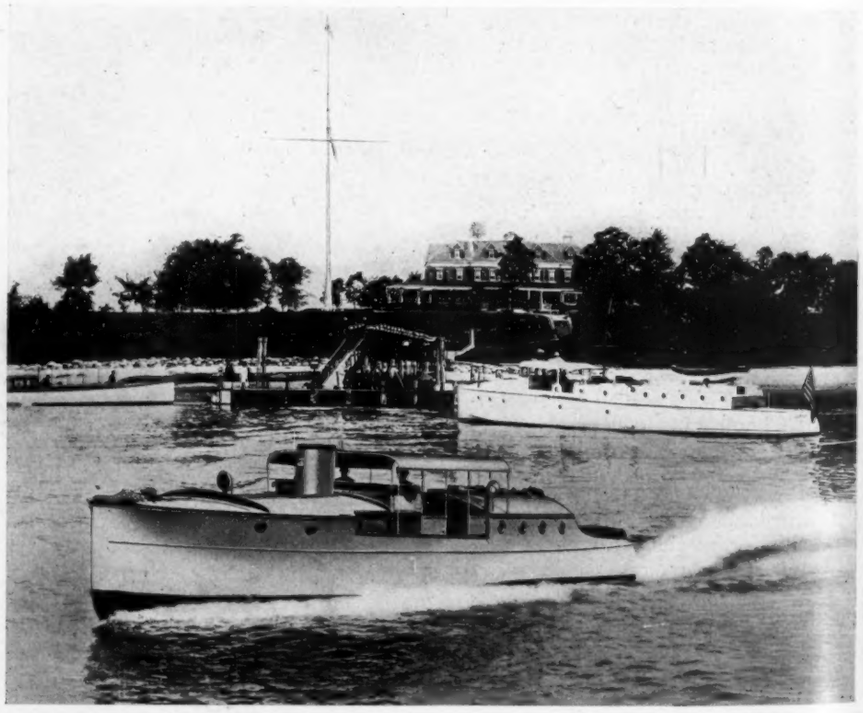
Before long, the landmarks on the mainland begin to stand out with more distinctness and the Skipper heads up for Signal Hill. As we approach the breakwater we begin to think for the first time of the piles of mail at home, and a hundred and one things to do in the city. The spell of the Isle of Summer has for five glorious days driven thoughts of such sordid things as mail and duties completely from our consciousness.

Military Type Stock Cruisers of a Popular Type

A number of boat building concerns during the past ten or twelve years have tried out various forms of stock boats. It remained, though, for the Great Lakes Boat Building Corporation of Milwaukee, Wisconsin to design and build a type of boat that met with popular favor. Two years ago the first forty-foot military type express cruiser was launched, tried out and proved exceptionally successful. This particular boat won the express cruiser race at Hannibal, Missouri, during the Mississippi Valley Regatta of 1915 and immediately afterward was purchased by Mr. Alfred I. Dupont, of Wilmington, Delaware and named "Petrel".

Several of these boats were sold during the season of 1915 and more during the early part of 1916. As it was found in 1916 that the demand called also for a similar boat of somewhat larger dimensions, the Great Lakes Boat Building Corporation decided to place on the market a fifty-footer of the same general type. This fifty-foot military type express cruiser is capable of a speed of from 20 to 24 miles per hour and comfortably and luxuriously accommodates a party of eight and a crew of two and withal is a seaworthy craft.

One of these fifty-footers was exhibited at the recent New York Motor Boat Show and created a sensation as it compared favorably with the finest products of the Eastern ship yards, both in design, equipment and workmanship.



A GREAT LAKES BOAT BUILDING CORP.'S EXPRESS CRUISER, OWNED BY MR. PHILIP DE RONDE, OFF THE SEAWANHAKA—CORINTHIAN Y. C. AT OYSTER BAY, N. Y. THIS CRAFT IS POWERED WITH AN 8-CYLINDER VAN BLERCK MOTOR AND HAS A SPEED OF 24 MILES AN HOUR

THE 50-FT CRUISER RAINBOW DESIGNED BY L. KROMHOLZ FOR MR. R. TELLER OF THE BAYSIDE YACHT CLUB IS A HANDSOME CRAFT WITH A FAIR TURN OF SPEED AND IS POWERED WITH A 6-CYLINDER 6-¼″ X 7″ NIAGARA MOTOR

Rainbow, a Handsome and Speedy 50-Footer

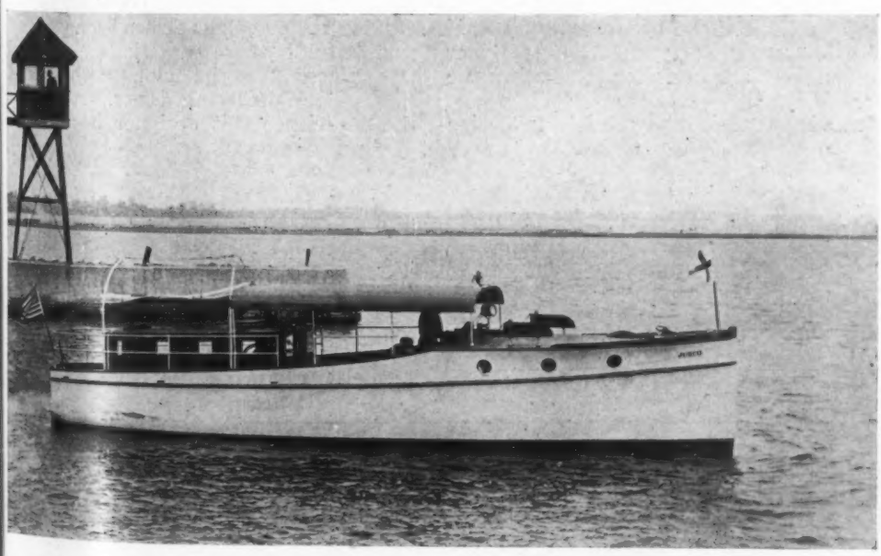
One of the handsomest 50-footers we have seen for a long time, and a fine example of yacht building, is the Rainbow, a 50-ft. power cruiser designed last year by L. Kromholz, for Mr. Wm. R. Teller, of the Bayside Yacht Club, and built by George Stelz, of College Point. The boat is 50 ft. in length over all, 10 ft. 7 inches beam, and 3 ft. 1 in. draft, and is a round bilge displacement boat and not the usual V-bottom type which seems to be the vogue at present.

The lines are pleasing, being easy, while the forward sections have considerable flam and the stern is unusually graceful. She travels at speed with very little fuss. Her power is a 6-cylinder 6¼ in. x 7 in. Niagara motor, which develops about 130 H. P., and turning at the rate of 1,200 revolutions, drives the boat 18 miles an hour. The owner did not want a speed boat but a cruiser with enough speed to get where he wanted to go in a reasonable time.

Under the raised deck forward is a toilet room, in the bow, a large saloon and galley. This is followed by an engine room amidships in which is a berth for the paid hand. Under the after cabin house is a toilet room, large locker and a big double stateroom with two wide berths. This is followed by a cockpit. There is a good sized bridge deck from which the boat is handled, the engine being run with all controls leading to the bridge. The power plant is the same as that in LeRoy Moody's Sea Wolf, built last year from plans by the same designer.

Cutting in the Water Line

Cutting in the water line requires a steady hand and a distinct line to follow. An easy way to strike the water line is to erect a straight plank at least twice the width of the boat, on edge, at right angles to the boat's verticle centerline; one at each end of the craft at a proper height to show several inches above the line of flotation. With some one at the other end stretch a chalk line between the upper edges of these, allowing it to touch the hull and by shifting the ends in opposite directions, a fair line will be marked on the boat. This should be distinctly marked later by a slight groove made with a rase knife and thus permanently fixed.

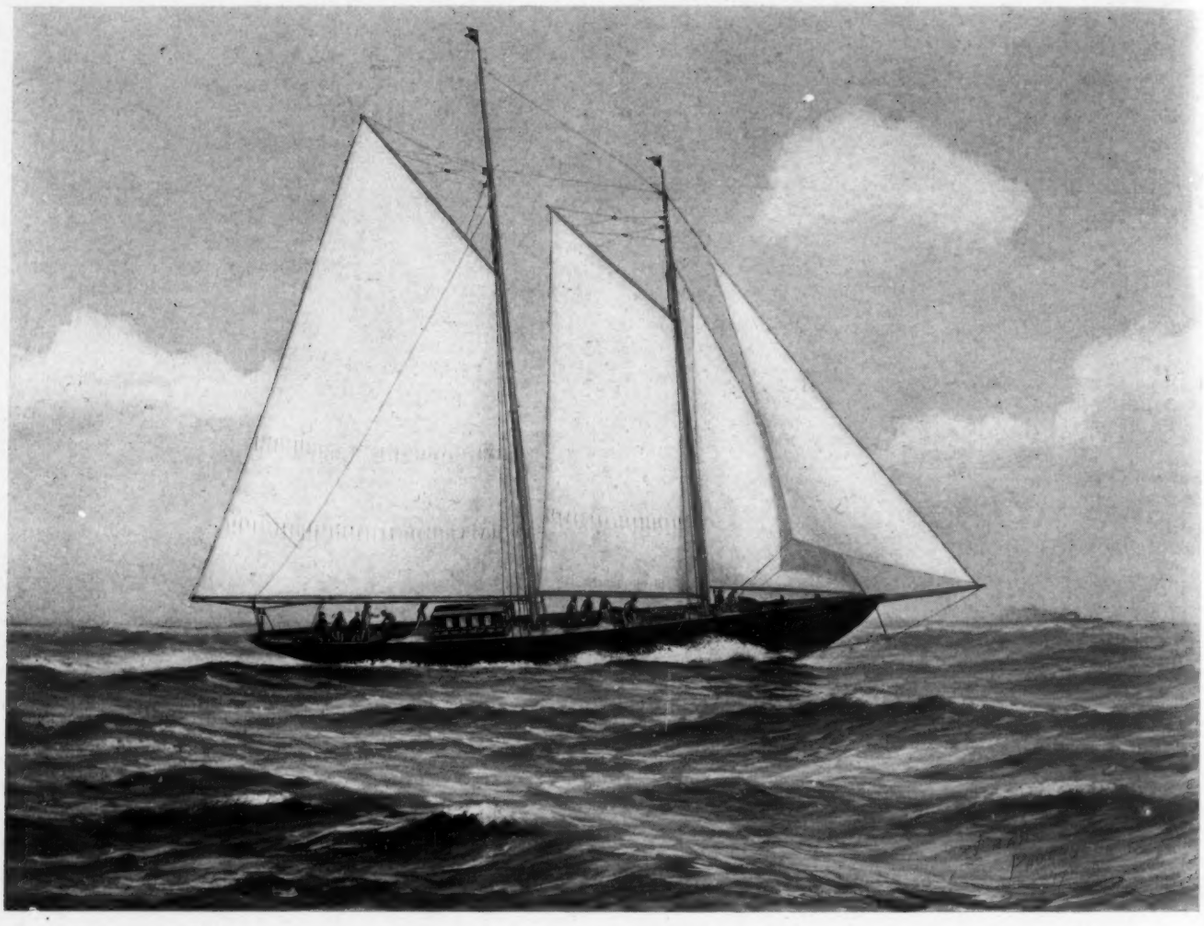


JUNCO IS A WELL LAID OUT STERLING-POWERED CRUISER 39½ FEET LONG X 9½ FEET BEAM OWNED BY MR. C. K. BENEDICT, OF SEWAUNEE, TENN.

A Well Appointed Great Lakes Cruiser

A well laid-out cruiser with every foot of space utilized to good advantage is the Junco, owned by C. K. Benedict, of Sewanee, Tenn. While only 39 feet 6 inches long by 9½-foot beam, Junco has accommodations that provide a galley, two staterooms, toilet, cockpit amidships, and a large trunk cabin aft. Current for the searchlight and cabin illumination is furnished by the generator attached to the engine which is a 4-cylinder, counterbalanced, heavy duty Sterling, fitted with electric starter. The engine is installed below the cockpit and does not take up space which would be of value for any other purpose. A dinghy is carried on the trunk cabin.

Junco is a stock model built by the Racine Boat Co. and is used on the Great Lakes. The boat is easily handled and of a good sea-worthy model. The 4-cylinder Sterling motor gives a cruising speed of 12 M. P. H.



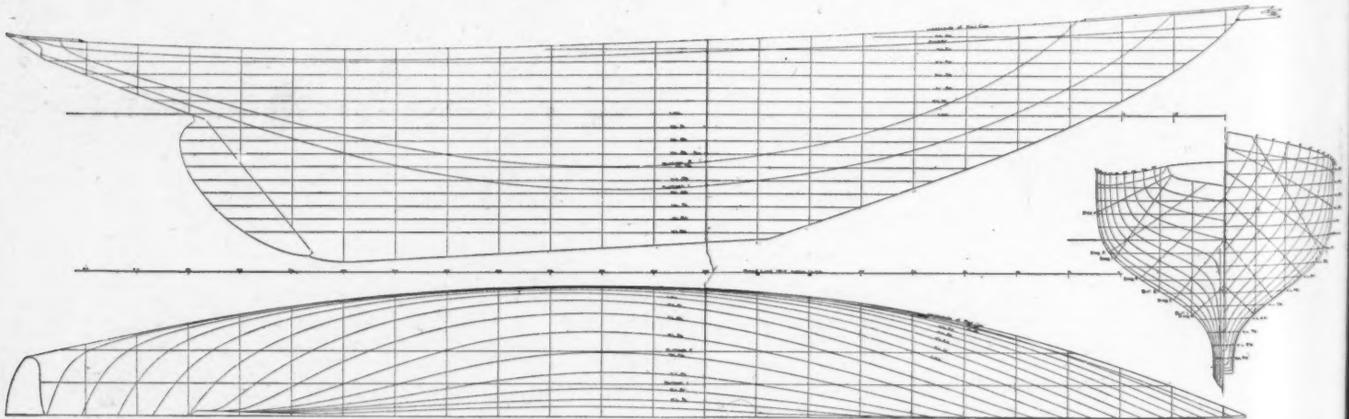
THE 72-FT. WATERLINE AUXILIARY SCHOONER DESIGNED BY JOHN G. ALDEN, BOSTON, MASS., FOR MR. W. P. FROST OF NEW YORK

A Real Sea-Going Auxiliary

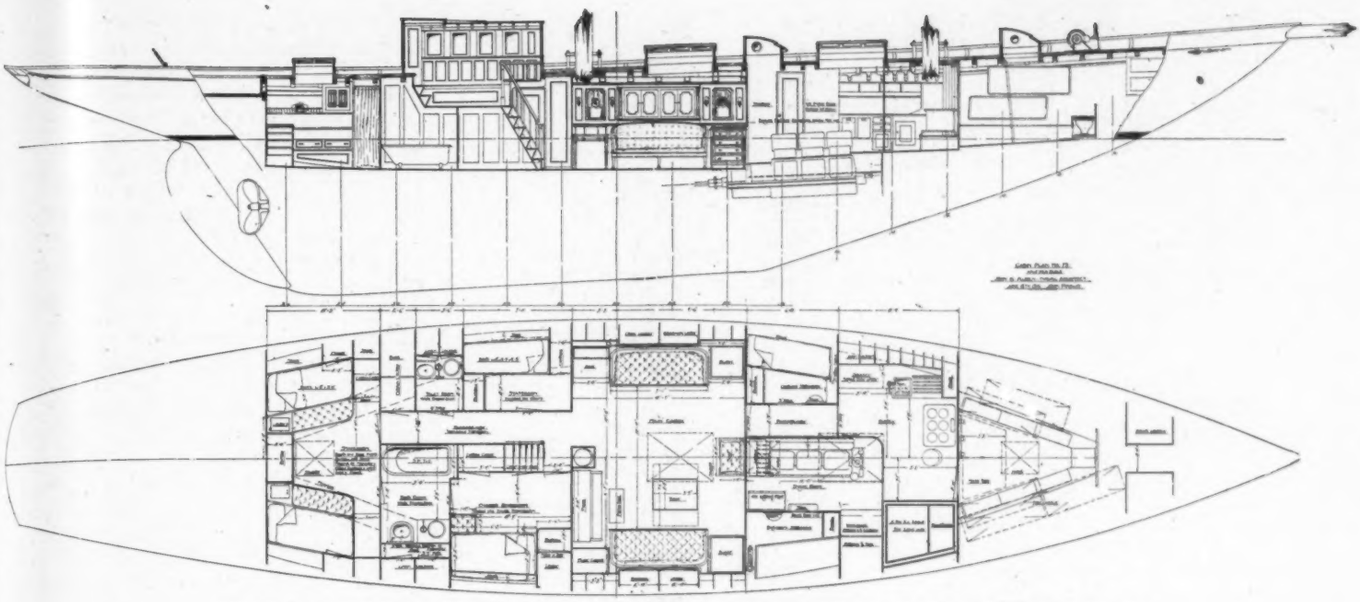
MOST of the auxiliary yachts that have been turned out so far have had one type of power entirely subservient to the other. In sailing yachts the auxiliary power has usually been such a minor consideration that, while the power was sufficient for moderate speed in a calm, it was too low to be of much real value; and in boats where the power has been the prime consideration the vessel has been almost useless under sail, being slow, hard to handle and lacking in all the elements that make for a successful sailing vessel.

This is not to say that there have not been successful auxiliaries, for there have; but in each case the emphasis has been laid either on one side or the other; while many auxiliaries have been converted from out-and-out sailing yachts, the power being entirely too small for the size of the vessel.

Believing that it was possible to design a sailing yacht that would retain th elements of speed and seaworthy qualiti and, at the same time, be as fast und power as a boat of that size could be reasona bly driven at sea, Mr. W. P. Frost, form owner of the power boat Cero which w built especially for the Bermuda ra decided to have plans drawn for a yacht th would fulfil these exactions. An ord was placed for the plans with John G Alden, N. A. of Boston, Mass., on account the experience this designer has had wi



THE LINES SHOW A BEAUTIFULLY MODELLED HULL



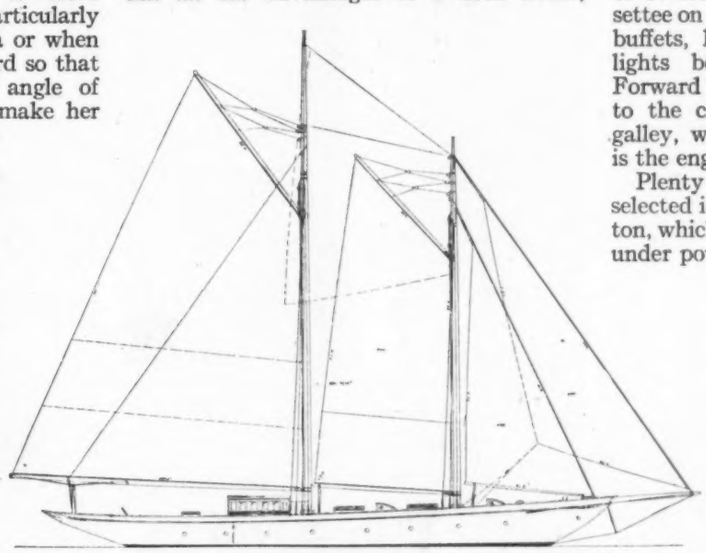
BELOW DECK THE CRAFT IS ESPECIALLY WELL PLANNED FOR THE COMFORT OF BOTH OWNER AND CREW

sea-going schooner yachts of the so-called fisherman type, and the boat that is described herewith was worked out in conferences with her owner and the editor of YACHTING.

It was desired to have a boat that could be run economically with a small crew and that offered the least wind resistance when under power, so a pole-masted schooner was decided upon, the dimensions being, 72 feet load water line, 96 feet 6 inches overall, 20 feet extreme beam, beam at waterline 18 feet 9 inches, draft 11 feet 3 inches, freeboard bow 8 feet 4 inches, least freeboard 5 feet, 3 inches. Instead of the extremely deep narrow keel of the average schooner yacht, the draft is moderate and the keel long with the fore and aft lines well drawn out and forming an entrance requiring little power to drive and at the same time particularly easy to handle under sail in a sea or when hove to. The bilges are fairly hard so that she will sail at not too great an angle of heel and yet not so hard as to make her too stiff or give her a hard, jerky roll, and the ballast, being divided between outside and inside should make her easy in a sea. There are 66,000 pounds of lead outside and about one-third of that inside. There is fine sheer both forward and aft with considerable flare to the forward sections so that she should be like a duck on the water and as dry forward as a boat can be when she is being driven into a head sea. A close study of the lines will show what a sweet model she has.

The sail plan follows that of a fishing schooner with a moderate sized mainsail of 2,080 square feet, the main boom being only 49 feet in length, the foresail containing 940 square feet. The staysail or jumbo has a boom, fisherman style, the bowsprit being very moderate in length. A main gaff topsail can be set, but a fisherman staysail would probably be used more often off the wind. The total sail area is 3,948 sq. ft. so that the yacht can be handled with a small crew of not more than four sailors with a total of seven or eight men, depending on the size of the steward's department.

She has flush deck with a small steering-well aft and bulwarks some 16 inches high forward, tapering to about a foot in height aft. Over the main companionway is a fine deck house which does not in any way spoil the looks of the boat and which yet has full headroom and is 10 feet in length with a wide transom on either side and large, heavy plate glass windows. This will be a most popular compartment as it has all the advantages of a deck house, giving a place to sit in and be comfortable in bad or wet weather where something can be seen, when one is not required on deck.



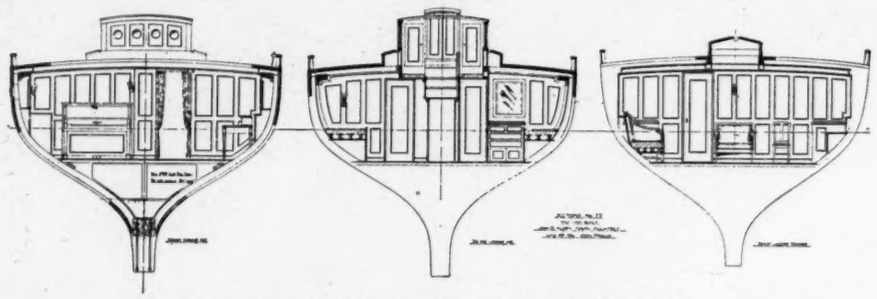
THE SAIL PLAN FOLLOWS THAT OF A FISHING SCHOONER

Stairs lead from this saloon deck house into a lobby or vestibule below from which opens on the starboard side the owner's stateroom with a double berth and finished as a double stateroom. On the opposite side is a large single stateroom and opening off the passageway leading aft are clothes lockers, oil-skin locker and a toilet room.

Aft of this there is a double stateroom the full width of the ship, with a skylight overhead, plenty of locker room, etc. Between this room and the owner's stateroom is a bathroom with 5-foot tub and all fittings.

The main saloon just forward of the mainmast is unusually spacious, being 12 feet 7 inches in length with a floor width of 10 feet 4 inches and it contains a wide settee on either side, an upright piano, desk, buffets, lockers, bookcases, etc., the dead lights being in alcoves and curtained. Forward of this is a passageway leading to the captain's stateroom and the large galley, while just forward of the bulkhead is the engine room.

Plenty of power was desired and the engine selected is a 100–125 H. P. 6-cylinder Winton, which it is estimated will drive the boat under power alone at 9 knots, or something over 10 statute miles an hour. The installation is unusually complete, on one side of the engine room being an electric lighting plant, while an engineer's stateroom opens off the engine room. Two fuel tanks, each holding 460 gallons, and two holding 390 each, 8 feet in length, give a total fuel capacity of 1,700 gallons, which will give her a continuous run of about 130 hours or a cruising radius of about 1,200 miles at full speed. These tanks are under the cabin floor and are fed under pressure to the engine. There is a skylight and hatch over



THE FULL BILGES ALLOW AMPLE FLOOR AREA AND ROOMY CABINS

the engine room giving plenty of air and ventilation and access is had to the compartment both from the deck and from the galley.

The refrigerator is unusually large, holding half a ton of ice, while the foc'sle is roomy and comfortable with plenty of locker room and contains pipe berths for five men. She is one of the most complete and comfortable schooners of her size ever designed and, while a small boat as ocean going schooner yachts go, she would take her "gang" *anywhere* with the maximum of comfort and speed that can be obtained in a boat of this size.

We believe that in the future sea-going cruising yachts will have more attention paid to power than they have in the past if the same can be had, as in this boat, without spoiling the sailing qualities.

Even Rats Seek the Almighty Dollar

When a ship rat gnawed off the corners and chewed its way into a roll of paper money, aggregating about $25, and representing the savings of Henry Garfield, a deep sea sailor, Garfield felt that the notes were valueless. The remains did not look good to him, but as soon as he returned to New York, he took a room at The American Seamen's Friend Society, 507 West Street and from there he sent the scraps to Uncle Sam at Washington, asking what percentage he could get out of it.

He has just received from the Treasurer of the United States full redemption value less ten cents postage and two cents insurance and is apparently deeply grateful for this restoration of his fortune. He has sent the following letter to Washington:

"Just a line to acknowledge receipt of $25 forwarded to me by registered mail by treasury department in redemption of damaged money I sent you, and to sincerely thank you for same. If at any time you should be a passenger on any ship I am engaged on, I will see that you have a reserved seat in the lifeboat in case of a mishap, or in case we should encounter a U-boat or run into a Bismarck herring."

It is not generally known that mutilated money may be redeemed at its face value but it is a fact and the treasury department will go farther and replace bills and even money that have been totally destroyed so long as the claimant can prove to the department's satisfaction that the loss is genuine.

The Lake Michigan Yachting Season

At a meeting of the Lake Michigan Association held March 10, at Chicago, dates were set for the principal races to be sailed on Lake Michigan this year. The first is June 16th for the Michigan City Race, Columbia Yacht Club. This is always the first large race and the course is right across the Lake, a distance of 38 miles. It is an annual event and this will be the twenty-sixth time the Columbia Yacht Club has held it. From 35 to 66 sail yachts made the trip last year and there were about 30 motorboats. This race is open to any yacht in the L. M. Y. A. and is sailed under Seawanhaka rule, according to the regular Seawanhaka classes. It is always a very successful race.

The next race will be the following day for a leg on the Stratford Hotel Cup—a thousand dollar cup that goes permanently to the owner who wins it three times. It may be by different boats and different years, and any yacht in the Association may race for it on Seawanhaka basis. The race must be at least fifty miles in length and it is a free-for-all that brings out a fleet champion. The course will be from Michigan City to the Cribs off Chicago and around enough of them to make the fifty miles, the finish to be at Van Buren Street Gap, off the Chicago and Columbia Yacht Clubs.

THE FAMOUS LIPTON CUP, FORMERLY RACED FOR BY THE 21-FT. CLASS, WILL BE THE TROPHY FOR THE UNIVERSAL RULE "R" CLASS ON THE GREAT LAKES THIS SEASON

On June 23rd the Triangular race of the Chicago Yacht Club will start, lasting three days, one for each leg and last year it was Chicago to Michigan City to St. Joseph to Chicago. This is for yachts of five tons or over and under the Universal rule.

July 4th was set for the Annual Regatta of the L. M. Y. A. and is to be sailed off Lincoln Park, Chicago, under the auspices of the Lincoln Park Yacht Club. It will be for all yachts in the Association, part sailing under Seawanhaka rule measurements, and the Universal rule boats in classes by themselves; the course is ten or twelve miles.

July 25 is the date selected for the Mackinac race—Chicago to Mackinac Island, for yachts five tons and over, under the Universal rule. The distance is about 350 miles. It is a Chicago Yacht Club event.

An item of unusual interest will be the Lipton Races to be sailed August 23, 24 and 25. The cup is for competition by the Universal rule "R" class this year, which of course is the coming popular class, especially for the Great Lakes. These will be for the famous Lipton Cup, formerly raced for in the 21-foot class. This will bring out the real champion "R" boat of the Great Lakes as it is already assured there will be three yachts in it from Cleveland including Pam and Mebleh and a new one building to be called Clarice, one building in Milwaukee by a member of the South Shore Yacht Club to be called South Shore, and three from the Lincoln Park Yacht Club of Chicago—one the existing Maia and two that are being built—seven so far. It will not be surprising to find others also at the starting line. This is a Columbia Yacht Club affair. The courses are twelve miles each, the first being triangular, the second to windward or leeward and return and the third quadrangular.

It is probable that the Chicago Yacht Club may cancel its racing schedule entirely on account of the war, as it holds a meeting April 19th to discuss this question.

Enamel Paint for the Top Sides

One coat of marine enamel makes an excellent finish, lasts well and is easily kept clean. Ripolin enamel is one of the best made for this purpose and if used should be laid on carefully and to secure best results the temperature should not be less than 60 degrees. It is quite important in using enamel to have the under coating smooth and for this reason it is well to purchase priming paint made for the purpose at the time the enamel is purchased. Good brushes are necessary and should be kept in linseed oil when not in use.

Building a Sixteen Foot Knockabout

Being the Story of an Inexpensive Way to Own a Useful and Able Little Boat

Concluded from the April Issue.

By GERALD TAYLOR WHITE

LET us take up the matter of the keel first. The only line you have on the floor that will help in shaping the keel is the line showing the bottom of the keel. By consulting the specifications you will find that the keel plank is in two pieces. One piece extends from Station No. 5 forward, and the other piece extends from Station No. 3 to the stern board. The balance of the distance is taken up with the centerboard slot. Set the board from which you are to cut the keel up in the vise and carefully true up one edge with the jack plane. Be sure that the edge is trued so that it is at perfect right angles to the wide side of the plank. Of course the faces of the plank will have to be smoothed up to a width of just ¾ inches, but this should have been done where you purchased the lumber, as it will be very hard to try and clean up rough lumber with hand tools. When you have one edge perfectly straight and true, saw the plank in two, having one piece about six feet long and the other piece a little over five feet long.

Take a hand full of large headed carpet tacks and lay them down on their sides about three or four inches apart, along the laying-down line showing the shape of the bottom of the keel. In placing these tacks do not drive them into the floor, but lay them down with the edge of the head exactly on the chalk mark. It may be wise to gently tap them with a light hammer until the edge of the head has been driven deeply enough into the floor to hold it temporarily. Now get an assistant to take hold of one end of one of the keel pieces and place it down on top of the tack heads so that the trued-up edge of the plank is exactly parallel to the base line, and also exactly 9 inches above the lowest point on the keel bottom line. It will help in doing this if a chalk line is stretched at the right distance above the base before trying to put the keel plank down in place, and then all you have to do is to lay the keel plank down so that the upper edge will be even with the chalk line. Do not slide the plank after it has been rested on the tack heads for it will move some of them out of place.

When satisfied that the upper edge is exactly in the right position gently tap the plank about over the row of tacks and then lift it. If the work has been done properly you will find that the tack heads have left a row of impressions that indicates the exact shape of the keel bottom line on the floor. Now take one of the battens and tack it to the plank so that one edge connects all the impressions, and saw and plane to shape. When sawing be sure that you leave about $\frac{1}{16}$ inch wood between the saw cut and the mark so that you can fair up smoothly and evenly with a plane. The after part of the keel may be obtained in the same manner as well as the stem piece. The inside edge of the stem is about six inches from the outer or forward edge. Take particular care in finishing up the edge of the stem that will butt against the top edge of the keel plank, for it must be absolutely true in all directions in order to make a tight seam.

To fasten the stem piece to the keel, bore two holes through both stem and keel and bolt the two pieces on top of one another with ¼-inch bolts. Before driving the bolts however you must smear the top edge of the keel where the stem will join it with thick white lead. In bolting the two pieces together you may use either regular galvanized or brass carriage bolts, or ¼-inch galvanized iron or copper rod and hammer a head on one end and then rivet over washers. The latter method is the means used by experienced boat builders but is hardly to be suggested for amateurs unless they are rather familiar with riveting practice. Although the white lead will really serve to keep any water from running aft through the seam, you will have to put in a stop water as a precautionary measure.

This stop water should be a plug of white pine ½ inch in diameter (an ordinary soft pine dowel is excellent), driven through the seam from side to side at a point 4½ inches from the forward end of the seam. In boring the hole for the stop water plug be sure that the center of the hole is exactly on the seam. A little white lead smeared on the plug may help to make it tighter. Cut the ends of the plug off flush with the sides of the keel.

Now lay the forward end of the keel on the floor and see that it fits the laying down line correctly and then saw it off at right angles to the top edge at a point ¾ inch forward of the Station No. 5 line. Shape the after end of the keel up in the same way, and saw it off so that the forward end is ¾ inch aft of Station No. 3. Temporarily tack the keel parts to the floor in their proper positions. Now turn towards the material for the center board trunk. The specifications call for a plank 18 inches wide. Endeavor to get a plank this width, but if it is impossible, make it up from two 9-inch pieces. To do this carefully, true up the edges that are to fit together, and then bore holes ¾ inch in diameter and about 6 inches deep, edgewise in each piece about 9 inches apart. A ¾ inch dowel driven into these holes so that about 5 inches of the dowel will project and engage similar holes in the corresponding part, will hold the two pieces together so that they will be as strong as a single width plank. However you will possibly have considerable trouble boring these dowel holes so that they are at perfect right angles to the edges of the pieces. If the dowel holes are not plumb with the edge, the dowels will bind, and prevent the two pieces being driven together, and of course white lead the edges as well as the dowels. Saw both trunk pieces off so that they are just 4½ feet long and then lay one of them down so that it fills the gap between the two keel parts and also laps over 6 inches onto each part. Now transfer the shape of the keel bottom between the keel parts, to the lower edge of the trunk pieces. This may be done in the same way as the transferring of the line to the keel bottom. After transferring however, move the curved line ½-inch above its transferred position, for the bottom of the centerboard trunk will act as a backing for the planking.

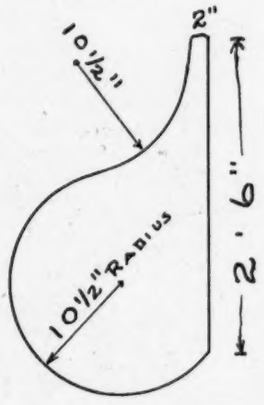
The next step will be the fastening of the centerboard pieces to the keel. There will be a 6-inch lap at each end, and you must fasten this lap with at least six fastenings passing through each trunk piece and the keel. These fastenings can either be bolts or rivets. Long galvanized nails with the points turned over on the opposite side, will do in a pinch. Be sure to coat the joints with white lead before fastening. Now fit in the two filling pieces which fill up the space between the trunk pieces and the keel. The outer edges of the filling pieces will be even with the trunk ends, the inner edges with the keel ends. Fasten these the same as the keel laps and fit the stopwaters.

The cheek pieces come next. These are set ½ inch up from the bottom line of the keel on each side, and form a backing for the planks forward and aft of the centerboard trunks. To get the shape of the cheeks, all you have to do is to lay the keel out on the lumber and mark around it, afterwards moving the line in ½ inch with a marking gauge. The cheeks are to be fastened to the keel in the same manner as the trunks, after being painted with thick white lead. The cheeks will have to follow the curve of the stem to the top of the latter.

The next point to take up will be the construction of the frames. On most boats it is necessary to build a set of temporary moulds, but in this boat we make the moulds of heavier stuff and use them as a permanent framework instead of throwing them away after the boat is planked. From the detail drawings you will see there is to be a frame at every one of the stations. The stern board or transom will form the frame at Station No. 0, and the stem will form the one at Station No. 8. The remaining seven are to be made as described below.

To determine the shape of the various stations it will be advisable to lay down the shape of each station on the floor. Note on the plans that I have drawn each section out separately, and it will be better to lay them out in this fashion, although the professional builders usually draw the sections one on top of another, using a

THE RUDDER

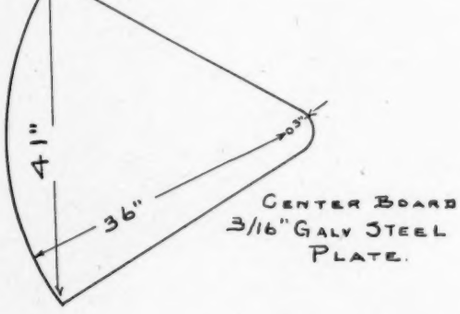


common line for the center of all sections. Unless one is used to working from such lay outs mistakes may be made by confusing the sections. It may be that by this time the constant walking over the floor has erased the base and section lines. If so, remark them. The long straight line which was snapped on the floor and used as a center line for the plan lines, and as a base for the profile lines, also represents the load water line of the boat.

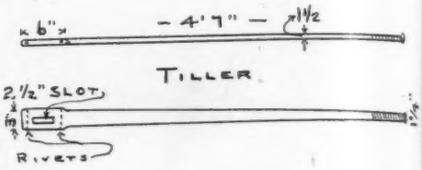
As a starter lay down section No. 4 on the floor. Measure out along the water line to the right, a distance equal to the beam of the boat at that station and measure at right angles to the water line a distance above the line equal to the height at that station. This will give a point on the floor 10⅜ inches above the base or water line, and 24⅛ inches to the right of the station line. Now measure out the width on the chine and square that dimension the proper height above the base. Next measure below the water line to a point on the center line showing the bottom of the keel. Join these three points with two perfectly straight lines. This completed, connect the upper and outermost point with the center line by a straight line at right angles to the latter. The result will look exactly like the No. 4 station shown. Do not confuse the drawings of the section lines with those showing the constructional details at the various stations. Those we are laying down now are simply the outline of the sections. To save trouble later on, due to the chalk marks being obliterated it may be well to transfer the section just drawn to the frame material at once. It may be impossible to obtain frame material in pieces wide enough so that the frames can be made in one piece. It is necessary of course to have the grain of the frame material run across the boat and not up and down. If the material is too narrow to be used in one piece, fasten two widths together with dowels exactly as was suggested for the centerboard trunk in last month's article, or fasten the two pieces together with oak cleats screwed to the back of the pieces. Transfer the shape of the section as laid down to the material and saw to shape. Remember that the section only shows one half the frame, so mark the opposite side on the material before cutting. Although some of the frames will have to be cut in half when set up in the way of the centerboard trunk, it is better to get them all out in one piece first. When sawing to shape cut directly on the marked line and then mark a line ½ inch in from the edges and saw and plane to the final shape. The object in cutting off the outer edges for a width of ½ inch is because the lines and dimensions are all given to the outside of planking and decking.

It is a good plan to let the upper, or deck edge of all the frames extend upward for the entire width of the material, cutting the crown of the deck afterwards when the frames are set in place and the planks are on. Construct the balance of the section frames in the same manner as described above, with the exception of the stern board. This board must be made of material according to specifications and is to be left full size, no ½-inch width to be taken off. Then on the inside, or forward side of the transom screw on the stern cleats as mentioned in the specifications.

The parts are now ready for setting up the keel. In this job it is not necessary to go to any great trouble in providing a set of keel blocks upon which to rest the keel, all that is necessary is to block the keel upon any firm foundation. Run a brace from the stem head to the floor to hold the keel perfectly upright. Fasten the two pieces that are to form the stern knee, then set the transom in place against the stern knees after smearing with white lead wherever the keel touches the transom. Fasten



with long screws from the outside through the transom into the stern knees. Be very sure that the transom is fastened in place so that it is exactly square with the keel in a thwartship direction. Run a brace from each upper corner of the stern board to the floor and fasten firmly. Mark on the keel the two-foot station marks and then lay the frames out on the floor opposite their final locations. Start at Station No. 7 and measure the distance from the top of the keel to the underside of the cheek pieces at that station and cut a notch in the lower part of the frame so the latter can be set down over the keel and cheeks, with the bottom of the frame even with the bottom of the cheek pieces. Obviously the notch must be cut exactly on the center line of the frame. Fasten the frame



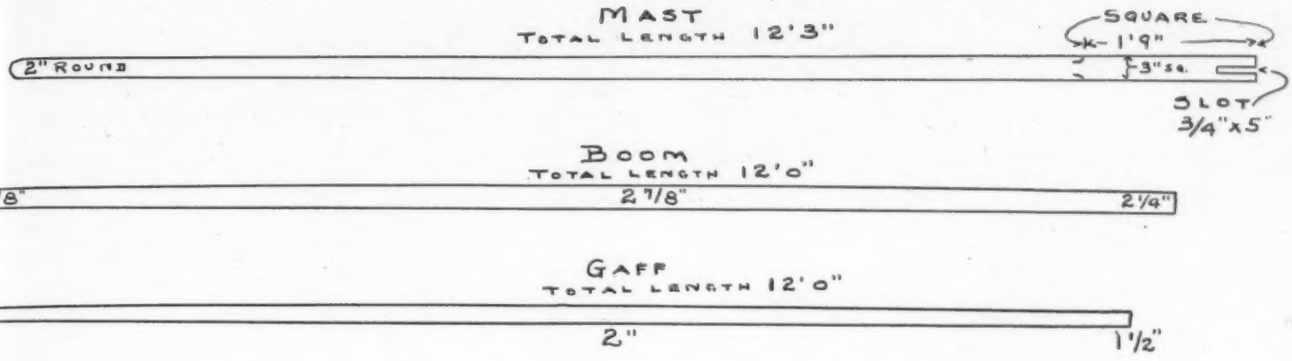
to the keel with several long screws driven in on an angle at several places. Before fastening make sure that the frame is plumb in a fore and aft direction. If you have not set the keel on the building foundation so that it bears the same relation to the floor line as it does to the water line or base, square up from the straight line forming the top of the keel and prove the set of the frames.

Frame No. 6 will go in place exactly the same as described above. Next put in place frames No. 1 and No. 2. These are all the frames that are to continue unbroken from side to side. Frames Nos. 3, 4 and 5 are cut in half by the centerboard trunk. In sawing these frames do not make the mistake of simply sawing along the center line, for there must be deducted from each side of the center line one half the width of the keel and trunk pieces. In fastening these three frames use a great deal of care, for it is highly important that each half of the frame be very strongly fastened to the trunk logs. With frames 3 and 5 this will not be so difficult, as the centerboard slot is not in the way and fastenings may be driven through from alternate sides. Frame No. 4 must be fastened as well as possible by "toeing" in screws from the sides.

The next step is to cut the notch in the lower outer corner of each frame for the reception of the chine. By temporarily bending the chine around the corners the correct angles to make the notches may be judged. Next cut the notch for the reception of the clamp at the deck corner of the frames. Then comes the simple cutting off of the lower inner corner of each frame to form a limber, to allow the bilge water to run fore and aft. By cutting so as to make a triangle having 1½-inch sides, you will have sufficient opening for the water.

Taper the clamps and chine pieces according to the specifications, and bend them in place around the moulds. The after ends fit into a notch in the stern cleats, and the forward ends into a box, or notch in the forward cheek pieces. Do not have the forward end of the clamp or chine, nearer the forward edge of the stem than 1 inch. Both clamps and chine pieces are to be fastened to each frame with a screw.

The hull is now ready to plank. First make sure that all fastenings are secure, and that the entire framework is rigid. Then



with a plane, bevel the sides of the frames so that the planks will touch the moulds evenly and not simply on one edge. By observing the angle at chine and clamp you will be able to judge this bevel very closely. On the bottom, the chine pieces will have to be bevelled off considerably before they will fair with the frames.

Having the side planks fitted first, leave most of the chine bevelling until the boat is turned upside down. To find the shape of the side planks will require one or two assistants. Let them help bend one of the planking boards around the hull allowing it to project above the clamp, and below the chine at every point, and then mark with a pencil the shape from the inside. The shape of the upper edge may be found exactly, but the lower edge can be approximated only when the final bevelling of the chine is done.

If the strain of bending the plank around the hull is great enough to force the framework out of shape it will be necessary to place as many more temporary braces to the floor and walls of the shop, as may be needed. After roughly sawing the board to shape try it again on the frame and then finish. The opposite side plank may be cut by using the first as a pattern.

Fit the plank in place and fasten it to each of the frames with long screws, drive these in at the top and bottom of the frames and then put in one or two nails between the screws along the chine and clamp placing them every six inches. In fitting the plank at the stem, bevel off the inside of the plank as well as the cheek piece until the plank ends fit smoothly, and place plenty of white lead under the plank ends.

In order to conveniently plank the bottom of the boat turn her bottom side up on the floor. As the two side planks are on and fastened you should be able to do this without straining the hull. Block up under the frames, and set a couple of braces to the floor and make ready to plank the bottom. The shaping of the bottom planks will be more difficult than the simple marking out of the side boards. Divide the distance between the keel and the outside of the side plank into three equal parts, marking the distance found plainly on the frame edge. At each mark cut a notch 1 inch wide by 5/8 inch deep, using the mark as the center of the notch. Fit the seam battens into the notch and box into forward cheek pieces and stern cleats. Do not fasten the battens except at the ends. Thus a framework is formed which will make the marking of the shape of the planks easy. Remember that due allowance must be made for the fact that the plank seam is to come at the center of the battens. Fit the garboard, or plank next to the keel, first. This plank must be screwed at the ends and at six-inch intervals into the cheek pieces. Take care that none of the garboard fastenings project into the center-board slot. Thoroughly white lead the cheek pieces before setting the garboard. Fasten to the seam battens with boat nails at six-inch intervals, turning the points over on the inside. Never attempt to drive a nail in any part of the boat without holding a heavy piece of iron (a flat iron is excellent), on the inside.

The outer of the bottom planks will need only to be fitted at the edge where it butts against the middle plank, for the outer edge will project beyond the side plank and may be sawed and planed off afterwards. Fasten into the chine exactly as was done with the garboard at the keel. Now plane the outside of the hull off, first with a jack plane, and then with a smoothing plane. Finish with a coarse grade of sandpaper. To sand a boat properly, the paper should be placed over either a block of wood or a block of cork, and the rubbing done across the grain of the plank. In case the boat is to be varnished on the outside the rubbing should be with the grain. Putty all the depressions over the nail and screw holes, Give the entire outside a coat of thin priming paint and then if you are going to paint the bottom with an anti-fouling paint first prime it with a coat of red lead paint.

Now turn the boat right side up and brace. Locate the cockpit as per the plans, and cut away part of frame No. 3 to allow more foot room. Plane off the upper edges of the frames to form the proper crown for the deck, fit in the breast hook and quarter knees according to the specifications and lay the decking in place, but do not fasten in the vicinity of the mast hole.

It is now time to start work on the mast and spars. Select sound clear spruce for these sticks, and you may find that a professional boat builder will be willing to get these parts out at a price that is very reasonable—for the making of a set of spars is rather harder than it looks. Saw the material into square sticks, and then gradually round by planing off corner after corner. Be very careful in tapering the spars and do not plane more off on one side than on the other, so as to cause a kink in the stick. At the mast hole the keel is 10 inches deep from top to the upper side of the cheeks. Cut a piece out of the keel at the right point, 5 inches deep and 3 inches wide, and then cut a notch 3/4 inch by 5 inches into the bottom of the mast. This will allow the mast to slip down on top of the keel and rest on the cheeks. It is of great importance that these notches be cut correctly so the mast will stand perfectly straight. On each side of the mast are fitted partner pieces 10 inches wide by 3/4 inch thick, and long enough so that they fit tightly between frames. They are to be very securely fastened to the frames and notched around the mast.

The deck planking may be fastened and the canvas covering stretched tightly over it and fastened over the edges with galvanized tacks. The canvas can be laid either in a thick coating of white lead paint or a coat of marine glue. The center-board pin, a 1/2-inch galvanized iron bolt with nut and washers, can be fitted and the board hung. The rudder and tiller are shown plainly in the drawings and are further explained in the specifications. The traveller, cleats, chocks, fairleads, etc., may now be fastened, although the fairleads should be left until the running rigging is rove. There is no need of our going into detail regarding the fastening of the goose neck, etc., to the mast, for these sort of jobs are self explanatory to a man who knows enough about boats to have attempted the construction of this one.

The art of sailmaking is one about which volumes have been written, and there can be no details given here, other than to say that the best way to learn is to get hold of an old sail of approximately the type desired and carefully study the methods of sewing. If you want an extra fine job done on the sails, it will pay you in the end to lay the matter in the hands of some professional sail maker for well made sails contribute largely to the success of all sailing crafts.

(Continued on page 301)

Under Sail

An Account of a Voyage Around Cape Stiff to Honolulu and Return in One of the Last Big American Windjammers, the Ship A. J. Fuller, as Told by One of Her Foremast Hands—Through the Trades. Approaching Home.

By FELIX RIESENBERG

CHAPTER XVIII

Through the Trades

WHILE still in the S. E. Trades we started our last long drill of all hands on deck in the afternoon; the final clean-up for port was to be a thorough one. Paintwork was scrubbed and when clean as new ivory it was given a coat of fresh white paint, stroked on with the greatest care. This done, the decks were again holystoned fore and aft; a most thorough job. We then knocked about in the doldrums for a week or ten days, and on Sunday, August 21st, we crossed the line for the last time on that voyage.

Ordinarily one might suppose that this last leg of the long passage home would be the most pleasant of all and that as port loomed ahead we would once more feel the genial glow of good fellowship that blossomed so warm upon our approach to Honolulu. But we were apparently nearing a bleak coast; a hard material country where the sailor man was on a strictly commercial basis of so little per month, and more men than billets; the crew would go of course and no one cared how much they cursed the ship, for they would do that anyway. The grub was worse because it was older; weevels were more in evidence than before, not to mention other pests such as rats and cockroaches, and we were feeling the effect of too close associations, a period of discontent, soon to change, but at that time most trying. Also, it was hot, as hot as it ever gets on the sea; our irritation became worse with every delay of head wind or of calm.

Mr. Zerk, for reasons unknown to us, became exceedingly brash, he went about looking for trouble and always found it, working us without mercy in the heat of the day, and horsing us about at night. His relations with the second mate were strained more than ever, and some of the men of the starboard watch came forward with a tale of a big row between the skipper and the mate, the sounds having come up from the after companion; of course anything like that would never take place upon those well disciplined decks.

This succession of trouble had its climax one morning when the mate set upon Chips, that most gloomy and industrious of all carpenters. The lanky one in returning from the poop with the running lights, had through some carelessness, allowed several drops of oil to smirch the spotless planks.

"You dirty low down bum! What do you mean by spilling that grease a'l over the deck?"

"Ay spill nothing!" shouted Chips, his slow soul riled to the point of protest at this latest insult.

"You didn't, hey? Well, *I'll* spill something!" The mate jumped down the ladder from the poop and made after Chips who was in the waist. Chips saw him coming, and as he had a heavy brass side light in each hand, he was helpless. Realizing this, he started to run and reached the door of the lamp locker as the mate came up to him.

DEEP WATER SAILING VESSELS USUALLY BEGIN AND END THEIR VOYAGES AT THE END OF A TOW LINE

Chips turned, dropping the lights and as he faced the furious first officer, that gentleman let drive a terrific crack with his right, fetching Chips just below the ear, and lifting him clean over the sill into the lamp locker. The mate went in after Chips, and for a few minutes the place was in an uproar. The mate stepped out, his hands covered with blood.

We were taking down the gear from the pins, after the washdown, and a number of us stood horrified in the waist, a feeling of deep repulsion coming over us. A big splotch of blood on the shirt front of the mate, must have come from Chip's nose.

The mate looked at us. He opened his mouth as if to bawl some order, or hurl some epithet at the men of his watch who had witnessed the brutal assault. Suddenly he turned round, and looked into the door of the lamp locker, a small room in the after end of the forward house.

"Get a bucket of water and clean up this mess. It's a lucky thing you didn't bust them lights when you dropped them." He was addressing Chips who came out of the door a moment after, hobbling to his room. The mate went aft, washing off his hands in a bucket of water that stood on the main hatch.

No one said anything, even in a whisper, but when we went below at eight bells and were assembled around the kids, one of the boys spoke up.

"Chips is cleaning up the lamp locker."

"I hope he reports Mr. Zerk to the Shipping Commissioner." I said. "If he does enter a complaint he has plenty of witnesses. It will mean jail for that bully and he deserves it."

"Sure, he deserves to be hung," said Brenden, "but Chips will keep his mouth shut."

"Why?" I asked.

"If he makes a squeal this will be his last ship. Chips has seen worse than he got, and should have kept his mouth shut. He gets forty dollars a month, ten more than the second mate. The Squarehead's no fool."

"Well I call it a dirty piece of work."

"Right—o!" agreed Australia. "That rotten bull ought to be hung by his thumbs."

While little was said about this particularly raw piece of brutality, it made a great difference to us in so far as we seemed to realize of a sudden that the fo c's'le was apart from things aft, and that it was just as well that we feel a little more agreeable toward each other.

The constant rubbing noses over the stinking grub, and the continued driving with no rest in the afternoons, made life anything but pleasant while we lingered in the tropics. But the blood spilled by the mate, as I have said clarified our atmosphere forward.

Talk of the days to come again waxed plenty and plans were gone over and over in the night watches. In calm, we fretted and fumed, watching and whistling for a breeze as though our very lives depended upon the blowing of a gale. Hitchen on Sunday afternoon, cut a cross in the main mast in order to bring on a wind, as this piece of vandalism was done in the second mate's watch, and in a place where it could not be seen without a search, no evil consequences ensued.

"We will have a wind before midnight," declared Frenchy with positive conviction

and during the dog watches we talked of nothing else.

Charlie Horse came out on deck in the second dog watch carrying his Bible, with a quotation about the wind, "thou hearest the sound, but canst not tell whence it cometh, for—the wind bloweth where it listeth," he read. Charlie Horse placed a deep significance upon the cutting of the cross in the mast. The faithful became more and more perturbed as the sun set and no sign of wind rewarded their belief in the cross.

We came on deck for the first night watch, and it was still dead calm, the sky clear and the stars shining with extraordinary brilliancy. A slight dew began to settle as the watch wore on and presently a sound aloft of the flapping of a skysail started us to attention. Wind! But where from?

Aft the mate and Captain Nichols were holding up wetted fingers trying to feel the direction of the airs that were undoubtedly stirring from somewhere.

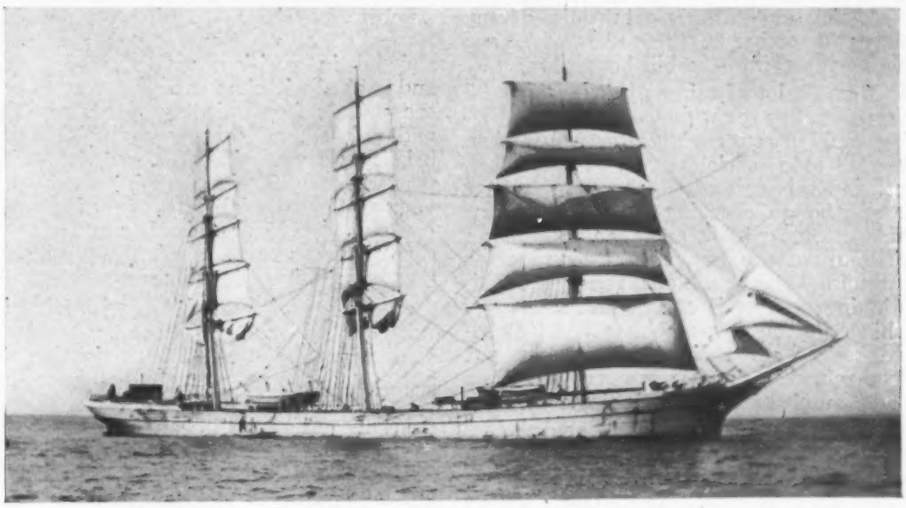
Frenchy used a different method, one I prefer to the wetted finger as it gives a more accurate sense of direction. He held his hand, palm down and with fingers slightly spread. By pointing the fingers around the horizon, the slightest breeze will make itself felt against the sensitive skin between the base of the fingers. "There;" cried Frenchy, his hand was pointing broad abeam to starboard. I tried it, and sure enough, I felt the slightest coolness between my fingers. Indeed our paws were none too sensitive, being calloused and hardened by many moons of hauling at gear and from much anointing in slush and tar pots. Presently things were moving aft.

"Port main; starboard crojik braces!" sung out the mate, and we walked the yards around lively. The canvas began to belly out and in a few minutes our hot faces were fanned by a refreshing breeze. This was the first touch of the N. E. Trades, and by midnight we had our yards trimmed with the wind close hauled on the starboard tack and the *Fuller* heading well on her course toward home.

When the starboard watch came on deck, Hitchen was all smiles, and the wise prognosticators of both watches were well pleased with themselves. They had got away with it by a narrow margin.

"I predict that its colder tomorrow," chipped in Australia.

"We got bean soup tomorrow, I bets," Scouse ventured, for in spite of the vindication of Frenchy, Hitchen and the others, we let it be known that luck was given the credit; luck and the cross. Most sailors of those days believed certain things, and a cross in the mainmast was as sure to bring wind as a ring around the moon was a sign of rain.



A SHIP LYING TO WITH YARDS ABACK AND TAKING THE PILOT ABOARD IS A RARE SIGHT IN THESE DAYS OF STEAM VESSELS

"WE HAD BEEN SIGHTING VESSELS CONSTANTLY, SCHOONERS AND STEAMERS AND WE KNEW WE WERE CLOSE TO OUR PORT"

CHAPTER XIX

APPROACHING HOME.

Once well in the trades we sailed along with great regularity running up our latitude with the precision of a steamer. While still within the belt of thunder showers I had an experience that cured me of a habit of long standing. I would, whenever possible, if on lookout, strip on the approach of a shower while in mild weather, and enjoy a fresh water bath. I usually pulled off my shirt and trousers, and balling them in a knot would tuck them around the clapper of the great bell on the foremast, this kept them dry, and left me to enjoy the refreshing rain. Of course lookouts were only stood at night. This last time, a beautiful black cloud came down with the wind, we were close hauled under all plain sail, and it did not look like a job that would need me down from my station. Accordingly, I stripped and going to the bowsprit, caught hold of the fore stay and started some gymnastics in anticipation of a real douse from aloft. It was not long in coming, and with the coldness of it and the look of the white caps lashed up under the cloud as it bore down on the ship, I felt that I had made a mistake. It was hail and not rain that came and while I was dragging my clothes out from under the bell and getting into them, I underwent a pummelling that left me sore from head to foot.

Of course we always went barefoot, except in real cold weather, and on the clean decks of a ship, this has much to recommend it. On the St. Mary's the order to go barefoot was always given when at sea during warm weather, and on the Fuller, I found that all hands forward did this as a rule. How beautifully simple it makes things cannot be imagined, except by those who are lucky enough to be able to look back at barefoot boyhood days.

While working up in the trades, we again shifted to better canvas, and also got our cables up and shackled to the anchors,

these being sent off the fo'c'sle head and hung under the catheads, the flukes of course being gripped into the bill boards.

We had a lot of rain at this stage of the voyage, and as the wind was strong the rigging would dry out rapidly after each wetting. Manila rope shrinks very much when wet, and this sort of weather always kept us on the go checking ropes to prevent damage to gear aloft, and then as the stuff dried out we would have to take in the slack all round. The remarkable strength in this shrinking process is shown in the grip of lashings put on dry, and then wet just before taking up their work. Rafts put together on deck and hove overboard are a good example of this sort of thing.

September 10th, found us one hundred days out from Honolulu. This was on a Saturday, and that afternoon we were permitted to have a last field day. Also we sighted a steamer, a welcome indication of approaching shore lines.

"Here Felix, take this." Australia handed me a sheath knife that I had always admired. "Remember me by it," he said. We were digging among our personal belongings, and as Australia passed around a number of things among the watch, the crowd all looked over their gear and there was a general exchange of remembrances. Scouse gave me a tintype he had taken in Honolulu, and Frenchy gave me a handsome pair of beckets with turks heads, that he had worked for my sea chest. Pipes, and even tobacco changed hands.

The weather was much cooler, though far from uncomfortable, and as we neared port, talk about the future again came to the fore, there having been a lapse of several weeks, almost a month, following the great revival of interest when we had put the Horn safely behind us. Work kept up incessantly, and as a final splurge, we scrubbed the ship over the side down to her copper composition, and painted her fore and aft, finishing off with a white stripe in the line of her sheer. As the scroll work forward under the bowsprit, that did duty in place of a figure head, and the scroll work aft had been gilded only the voyage before, the Fuller presented a very neat appearance.

The brass work lining the pin rails and aft on the poop was polished to perfection, and every last turn and corner was done to the final satisfaction of the mate. Aloft we were as trim as a ship ever got. No loose ends, all mats and chafing gear neatly stopped in position, masts scraped clean and rubbed with just enough grease to keep the parrals from sticking, yards scrubbed and painted, and the tops and doublings bright as a new pin. We were to go into port with the old girl reflecting a well spent voyage, for the critical eye of Captain Burnham would appraise her and rate his captain and mate accordingly, for he was a most knowing old ship manager.

A week of rains and blows with fair wind was followed by a day of calm, a heavy fog settling down. We had been sighting vessels constantly, schooners and steamers, and knew we were close to our port. The old mechanical fog horn, an ancient device worked by hand, was set croaking on the fo'c'sle head, a job as bad as the bilge pumps, and we lay flapping our idle wings in the fog. Several casts were taken with the deep sea lead; we were in soundings.

The following day, Sunday, it cleared a bit, with a warm sun on the waters but the wind was still up and down and a rim of mist shut us in, for our horizon was very dim.

"Keep that horn barking!" shouted the mate after the washdown. I was on the fo'c'sle head breaking my back over the ancient contraption, when an echo seemed to come in over the bow. The fog had shut down again.

"Steamer off port bow!" I shouted, for I recognized the deep tones of a whistle.

"Aye, aye! Give her the horn!"

I pumped down hard, and a moment later a tug shoved her nose through the mist, a stumpy craft with the typical high pilot house of the American tug boat; we were home at last!

"Where bound, Captain?" came the hail.
"Delaware Breakwater!"
"Want a tow?"
"How far are we?"
"About three miles!"
"All right, give us your line!"

As the tug ranged ahead and took our heaving line, we read her name; she was the Atkins Hughes, of Philadelphia.

Droughing slowly through the heavy mist, we furled sail and toward noon were at anchor behind the DelawareBreakwater. A launch came out and we found the war with Spain was over, the date of our land fall being September 18th. 1898.

We heard of the great battle off Santiago, and that the Hawaiian Islands had been annexed. Peter and I got the surviving Kanakas Kahemuku and Joe, up on the fo'c'sle head and made them give three cheers for their new country. After several starts they did this very well, much to our amusement.

"Where is Pilladelpia?" Kahemuku wanted to know.

"Right up there Kahee," said Peter, pointing up the Delaware, now that you are an American citizen you will have a fine time when you get there."

That Sunday afternoon we sat about yarning; anchor watches were chosen and a full night in was before us. We were tired and sea worn and a trifle sad. Back of us the hard days of the voyage, ahead of us, what? We were soon to part and no one mentioned this important fact. We were glad of course, happy to so soon collect that long looked forward-to payday, and to carry out the great plans so long in the making. I felt a hollow homesickness that had to be suppressed with a firm hold and, as we rested, smoking and yarning, I have no doubt many wondered if they were really to act upon the good resolutions so bravely determined.

Axel and Frenchy joined me on the fo'c'sle head and we talked of many things. I was going home, but they wanted me to surely write them. Both were to ship as soon as possible for their native shores. Old Smith was as quiet as it is possible for a sailor of the old school to be. He sat on the fore hatch smoking. "What are you going to do?" I asked Smith.

"Well, if what I have done before is any criterion," he said grandly, "I guess I am going to sea again as soon as my pay is spent and I get a ship. China for me next, I am through with the Horn."

The light on Cape May, the twinkle of lights ashore, and the clear autumn night following the day of fog, came as a welcome relief. We needed sleep; we were tired and we were on the eve of parting. I remember during my anchor watch, from two to four in the mid watch, I stumped the deck in a highly reminiscent mood. Several times I went to the fo'c'sle doors and looked in; bad as the drill had been, I hated to leave it.

(To be Concluded.)

Adrian Wilson of Wilson & Silsby

American yachtsmen as well as many in Northern Europe will regret to hear of the death on February 17th, of Mr. Adrian Wilson, of the firm of Wilson & Silsby, who might with just reason have been called the dean of American sailmakers. His name at least was known to practically every man who ever owned a sailing yacht in this country.

Mr. Wilson was born at Port Jefferson, Long Island, New York; the youngest son of Reuben H. Wilson, who was a sailmaker, and whose proudest achievement in his business career was to make the sails for the Yacht America, which won the Hundred Guinea Cup, at Cowes, England, since known the world over as the America's cup.

Adrian Wilson received his education in the schools of Port Jefferson, and his practical education from association with sailing masters of the old school, as that village was almost entirely populated by men who followed the water or were engaged in building and fitting vessels for sea. His first boat was a skiff, which he sailed with much pleasure, and by keen observation laid the foundation for later success in his work of building sails for the most famous yachts of their time.

After leaving school, Mr. Wilson made several voyages in local vessels, gaining experience and knowledge of the sea and its ways which enabled him to do his work remarkably well, and to make sails that would meet the requirements of strength as well as utility. He then entered his father's business, and later, with his brother Frederick, Mr. Wilson became a partner in the business.

When the business of building wooden ships declined on Long Island, Mr. Wilson decided to leave for a larger field, and selected Boston as offering opportunities in his line. He located in that city and from a small beginning his business grew to be the largest in his line in the United States.

He made sails for the early cup defenders, Puritan, Mayflower, Volunteer and Defender; and equipped the following named yachts which were candidates for cup defenders: namely, Pilgrim, Jubilee, Colonia, Constitution and Defiance.

Mr. Wilson made a careful study of yarns and weaving, and spent considerable time in cotton mills where cotton duck was being manufactured. His observations and experience gathered in this manner, with his knowledge of working conditions under which the sailing master, sail maker, and duck manufacturer worked, brought an experience and judgment that made him unusually well equipped for his business.

This fortunate combination added to his wide acquaintance and many friendships in yachting circles, together with his high business principles, brought to his establishment a large volume of business; and to his satisfied customers, he pointed with pride. Evidence of his fine qualities of manhood, and regard for all who were worthy, is shown in his friendships, which in yachting circles frequently included the owner, designer, sailing master, and often those in the forecastle.

ADRIAN WILSON WHO MADE THE SAILS FOR A NUMBER OF THE AMERICA'S CUP DEFENDERS, AS WELL AS FOR THOUSANDS OF AMERICAN YACHTS

Mr. Wilson was very proud of the friendships and confidence of such fine types of men as General Chas. J. Paine and Edward Burgess. To them he felt very grateful for advice and counsel and had very deep respect for their memory.

To mention the close friends of Mr. Wilson would be to name nearly all of the prominent yacht designers and sailing masters of his period. Those who knew him best, found him to be a profound lover of nature with a remarkable knowledge of fish and game life, and to this store of knowledge he continued to add until his death.

Mr. Wilson had not been actively connected with business for the past few years, the firm having been incorporated some years ago and carried on by Mr. Hayes. The firm, will, of course, continue as in the past and will not be affected from a business standpoint by Mr. Wilson's death, but will continue to carry out the principles for which Mr. Wilson had stood so long and firmly.

LYNX, NO. 9 WAS ONE OF THE FIRST CRAFT OF HER TYPE TO BE TAKEN OVER BY THE U.S. GOVERNMENT

Lynx—No. 9 of the Volunteer Patrol Squadron

When Paul Revere cranked up his single horsepower, two-lunger and galloped through the streets of Boston he performed a necessary service, and established the point of action from whence great patriotic movements were destined to emanate.

A similar service was rendered in that territory by Nathaniel Ayer, Jr., two hundred and fifty horsepower strong, when his 45-foot Sterling powered Lynx sped up to the ferry landing at Gloucester on its mission of enlistment. To this exceptional little craft belongs the distinction of being the first vessel of the Volunteer Patrol Squadron to be taken over by the U. S. Government for active service. This boat was offered, and selected as the most satisfactory chaser, to carry the enlistment officers on their trip along the New England Coast, for naval recruits among the sturdy fishermen.

Leaving Charlestown Navy Yard, March 10th, Lynx made the run for Gloucester at top speed. She is a heavily constructed craft, built for business as well as speed; yet with ten men aboard, and mounting a one-pounder forward and two rapid firing guns aft, with the necessarily heavy installation, her two Sterlings shot her over the water at a 23 knot clip.

Exceptional progress with the Naval Reserve was made at Gloucester and the following day a run was made from Gloucester to Cohasset in a blinding snow storm, under conditions anything but favorable to a boat under 100 feet in length

Plastered with icy spray she shut down at Cohasset where assembled sailors, awaiting the arrival of Lynx with the naval men aboard, had witnessed the gallant battle. Enthusiasm and patriotism ran high through the rousing meeting that took place, resulting in the application of more brawny men than could be immediately enlisted by the small force of naval officers.

Against the destructiveness of the submarine there are only but few precautionary methods—among them the steel net, the seaplane and the well named "swatter".

Sails and Rigs

A Voyage of Instruction for the Man Who Wishes to Know Something About the Sail Plans of Yachts

By CYRUS WILSON

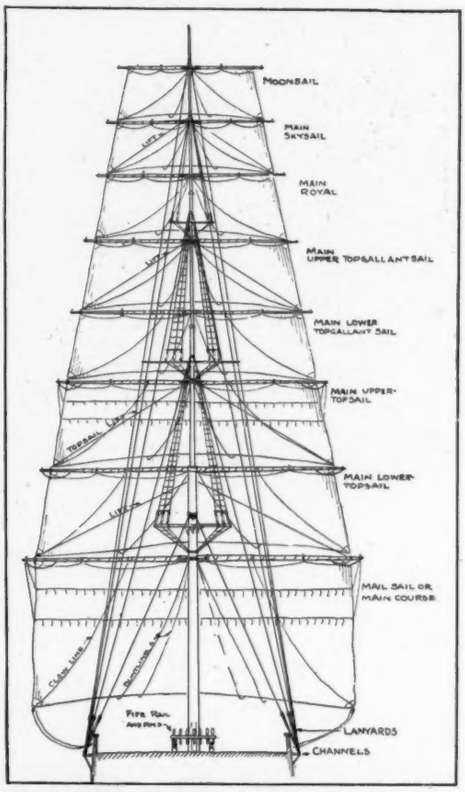
TO the lover of the sea and the student of the mighty fleet that traverses its well nigh endless courses from the land of the Chinee, to the ice bound shores of the Russ, through the sunshine of the Mediterranean, the gales of Cape Horn, the calms of the Pacific or in the paths of the trade winds, there is a special delight in the sight, even in the thought, of a square rigged vessel.

To us of the United States these craft hold an especial appeal, for it was during the era of sails—of square sails—that our merchant marine and our navy advanced to the highest pinnacle of development. And in total tonnage, fleetness and efficiency our ships led the world and proudly flew the Stars and Stripes in the farthest and nearest ports of the world.

And so, as this little voyage of instruction for the man who wishes to know something about the sail plans of yachts and boats nears its end, the square rig, with all its maze of halyards, stays, shrouds, lifts, braces, ratlines, lanyards, ties, sheets, buntlines and brails, its handsome spread of sail and its stately spars, stands out as the most interesting of all rigs because of its intimate association with the sea and of all that the sea means.

For long voyages on deep water the square rig has certain advantages that are lacking in wholly fore and aft rigged craft. The courses here are long and therefore the ship is not tacked as often as would be necessary in coastwise voyages. This holds especially true in the paths of the trade winds where for days the bellying canvas drives the old craft on amid the music of swishing water alongside, the chant of the wind in the rigging and the ripple of the reef nettles pattering their inimitable song on the sails.

The topsail schooner is the plainest of the square rigged craft and spreads a modest cloth or two from yards on her foremast in addition to the regular fore and aft schooner rig. Usually an upper and lower topsail



THE MAINMAST OF A SHIP SHOWING ALL THE SQUARE SAILS AND THEIR NAMES. THE MOONSAIL IS PRACTICALLY NEVER CARRIED NOWADAYS

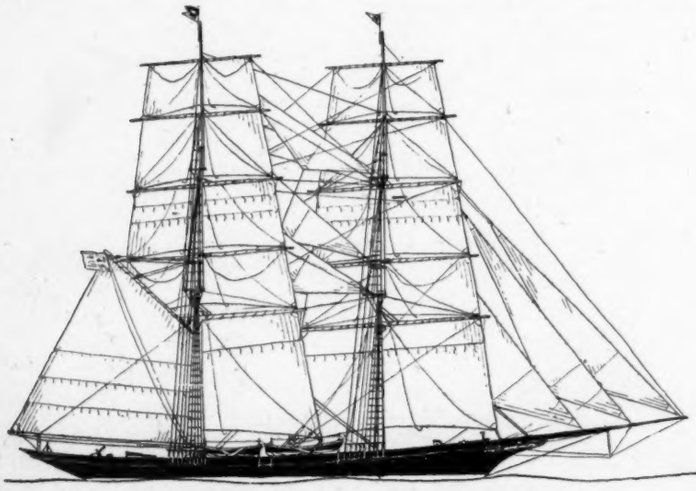
extended upon three yards, the lower one called the fore yard, the next highest the fore lower topsail yard, and the fore upper topsail yard. Occasionally, in addition, a similar rig is carried on the main mast. The rig is then a two topsail schooner. This rig is now obsolete. A three masted topsail schooner, as the name implies, is a schooner of three masts with a square rig on the fore in addition to a fore and aft sail.

A hermaphrodite brig or brigantine, as it is commonly called, was formerly a two-masted vessel, square rigged on the foremast with a schooner rig on the main mast that, in addition to the regular fore and aft rig carried a light square topsail. Today, however, the square main topsail has been discarded and craft of this description carry the following sails on the foremast, in order of their height from the deck; foresail, lower topsail, upper topsail, fore topgallant sail and fore royal. Their yards are, fore yard, lower topsail yard, upper topsail yard, topgallant yard and royal yard. In addition, of course, there are the regulation headsails—flying jib, outer jib (sometimes called main jib) inner jib, and foretopsail staysail. The mainmast carries a gaff headed mainsail and gaff topsail, besides a numerous spread of staysails, the lower one being the main staysail and following aloft in order, middle staysail, main topmast staysail, and main topgallant staysail.

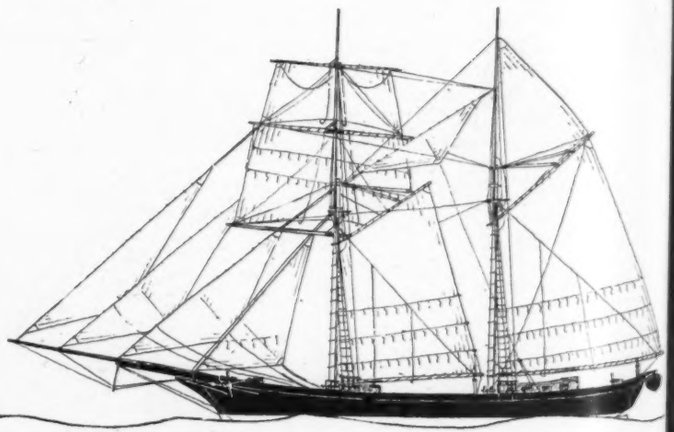
A barkentine is a three-masted vessel with a square rig on the foremast, similar to that of a brigantine, the main and mizzen being schooner rigged. The barkentine shown, which is the training ship Newport, is an older type of naval vessel and her rig varies from that used on commercial craft by having a single foretopsail. Formerly all square rigged craft spread a large single topsail, but as sailing craft grew in size and the crews became smaller these large sails became cumbersome and so difficult to handle that they were replaced by the now generally used upper and lower topsails.

A vessel with two masts, both square rigged, the main with a gaff headed sail, called a spanker, as well, is a brig and the headsails and main staysails are similar to those of the brigantine rig. Such a rig is commonly called a full-rigged brig to distinguish from a brigantine.

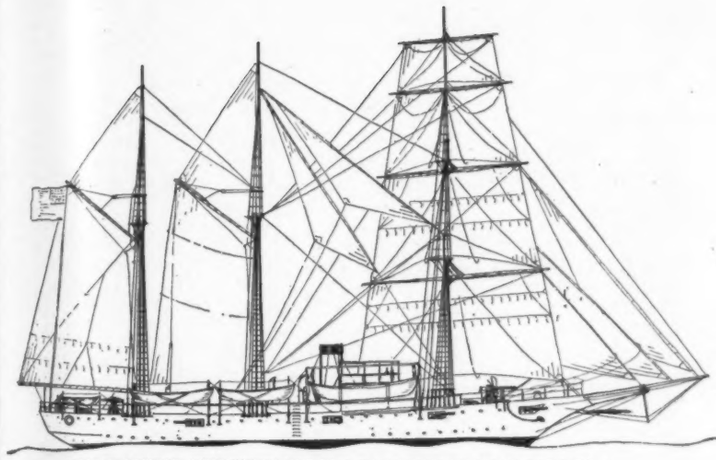
The bark is a vessel having three masts, the fore and main mast being square rigged



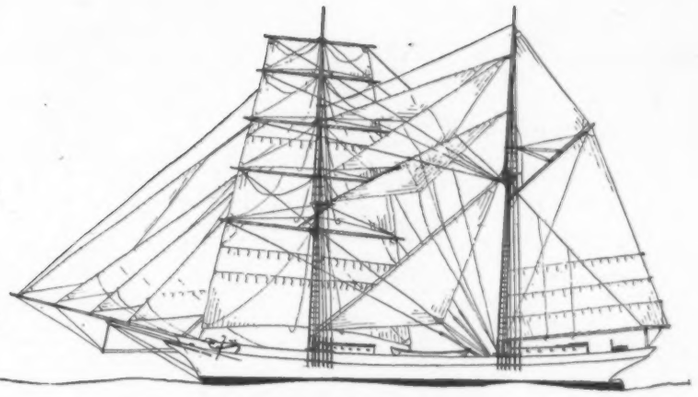
A BRIG HAS TWO MASTS, BOTH SQUARE RIGGED



THE COMPARATIVELY PLAIN RIG OF THE TOPSAIL SCHOONER



THE TRAINING SHIP NEWPORT IS A BARKENTINE THAT CARRIES A SINGLE FORE TOPSAIL



THE HERMORPHRODITE BRIG IS COMMONLY CALLED A BRIGANTINE

like those of a brig, and including a loosefooted gaff headed sail, the spencer, on the mainmast, the mizzen mast being fore and aft rigged.

The sail plan of a ship shows three masts, all square rigged with the usual head and staysails, the main having in addition a gaff headed sail on the mainmast, called a spencer, and a similar one on the mizzen mast, called a spanker. Some of the larger ships have four masts, the after mast generally being fore and aft rigged and called the spanker or jiggermast. There is usually some discussion when sailormen forgather as to whether the last described rig is a four-masted ship or bark. There are arguments on both sides, but it may be said that among American sailors it is usually called a four-mast ship, by English sailors a four-masted bark, as they reserve the title "ship" to a vessel square-rigged on every mast.

All square rigged craft have similar characteristics so far as their rigs go. The tall masts in all are usually formed by three, sometimes four separate spars all joined head to heel and supported athwartship and fore and aft by shrouds and stays. Foremast, mainmast and mizzen mast are the lowermost ones, and above them rear the topmast and topgallant mast, usually independent spars, the higher ones being subdivided by whiths into royal mast and skysail mast. At the lower end of the mast doublings there are platforms for the spread of the rigging, the lower ones called tops and the others cross trees.

The sail plan shown is that on the mainmast of a full rigged ship, one of the older fashioned type that carried all the sail possible, to cut the minutes from the time of passage across the Atlantic or round the Horn. Far aloft and only on the mainmast the moonsail (only on very tall ships) is set to catch the lightest airs and below, in order, are spread a main skysail, main royal, main upper topgallant, main lowertopgallant, main uppertopsail, main lowertopsail, and mainsail or main course—eight in all.

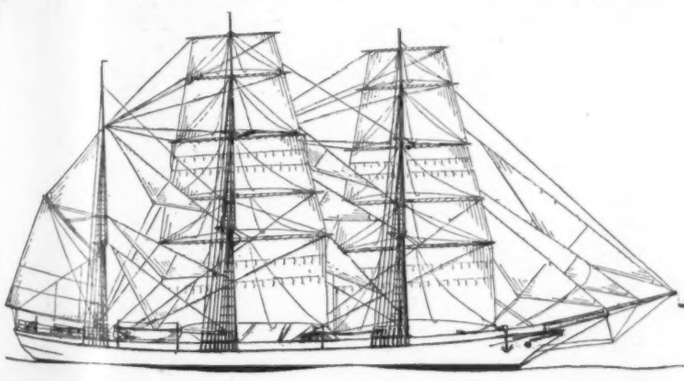
Yards extend these sails and are named as the sails are from the light moonsail yard down to the sturdy main yard. The two lowermost yards on each mast are swung from a truss on the yard and a truss hook on the mast, being held in position and away from the mast by slings from the heel of the mast next above. All the other yards swing on parrels, hooplike fittings, that encircle the mast with light knees each side to take the thrust. This allows them to be raised and lowered as occasion demands. The lower yard on the mizzen mast is called the crojic, spelled cross-jack.

The athwartship position of the yards and the sails is controlled by braces leading to the deck from the two lower yards and to the mast heads from the upper ones, all the fore and main braces leading aft while those of the mizzen yards lead forward. The gaff headed sails on the main and mizzen mast, the spencer and spanker, hardly require description as they are similar to and are handled like all fore and aft sails, the spencer being used only as a storm sail. It is usually brailed in to the mast and not lowered and raised.

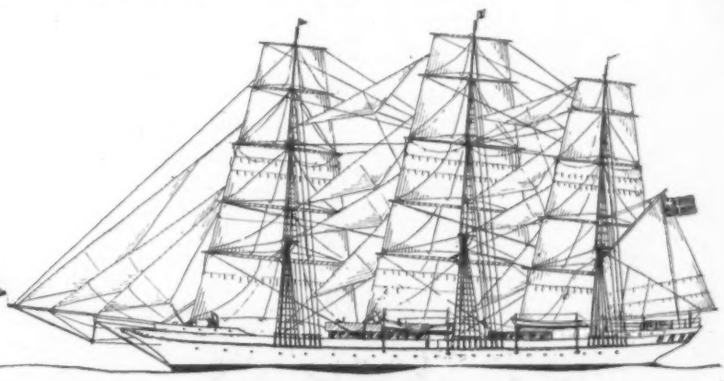
The bowsprit, jibboom and flying jibboom that thrusts its pointing arm far ahead of the ship and carries the stays for the jibs where they flutter as they catch the first fitful gust of a new found breeze, is but two spars, the inner one that seems almost a part of the stem being the bowsprit, while the single tapering other spar is the combined jibboom and flying jibboom, the line of demarkation being the fitting that holds secure the lower end of the outer jib stay.

Five staysails are usually spread between the main mast and fore mast, their names being, beginning with the lowest one, main staysail, main topmast staysail, middle staysail, main topgallant staysail, and main royal staysail. Between the mizzen and the main mast the general practice is to carry four staysails called mizzen staysail, mizzen topmast staysail, mizzen topgallant staysail and mizzen royal staysail.

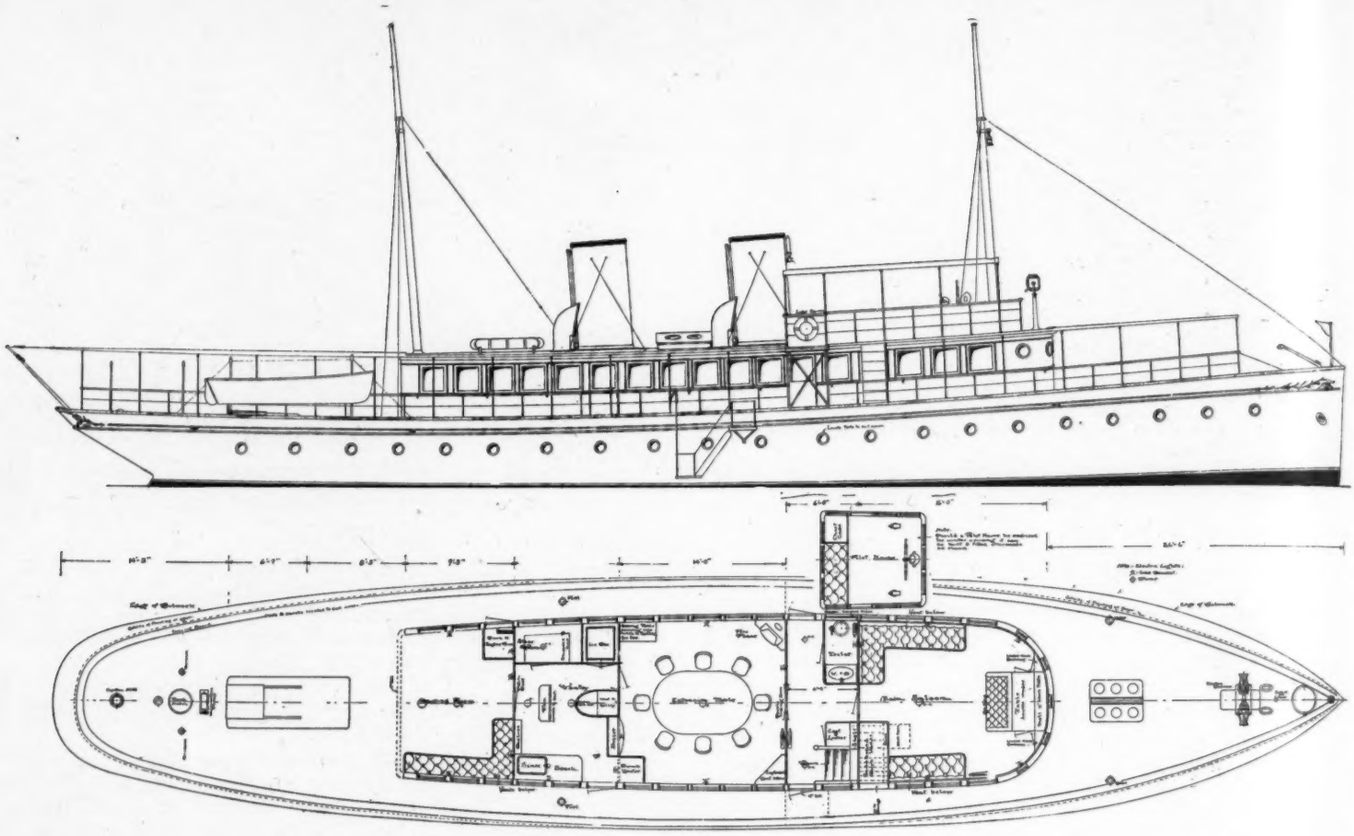
There are various rigs in addition to the ones that have been described on this little voyage—four and even five masted ships, three and four masted topsail schooners, four masted barkentines—and a number of rigs of vessels of foreign lands, but these are unusual types used almost wholly in commercial vessels and so have not been described.



THE BARK IS A THREE MASTED VESSEL SQUARE RIGGED ON THE FORE AND MAIN MAST, FORE AND AFT RIG ON THE MIZZEN



THE SHIP RIGGED YACHT VALHALLA FINISHED THIRD IN THE RACE ACROSS THE ATLANTIC IN 1905 IN COMPETITION FOR THE GERMAN EMPEROR'S CUP



Consuelo, a 110-Footer

One of the first of the large cruisers to be built for the season of 1917 is the 110-foot sea going yacht Consuelo for J. Percy Bartram, of the New York Yacht Club. This yacht was designed by J. Murray Watts, of Philadelphia, and is building at the yards of the Geo. Lawley & Son Corp., Neponset, Mass. The general dimensions are; 110 feet over all; 102 feet water line; 21 feet beam and 5 feet 8 inch draft. The boat shows the general tendency of the large motor yacht to get the accommodations of a houseboat with the sea-worthiness and shippy appearance of a sea going vessel.

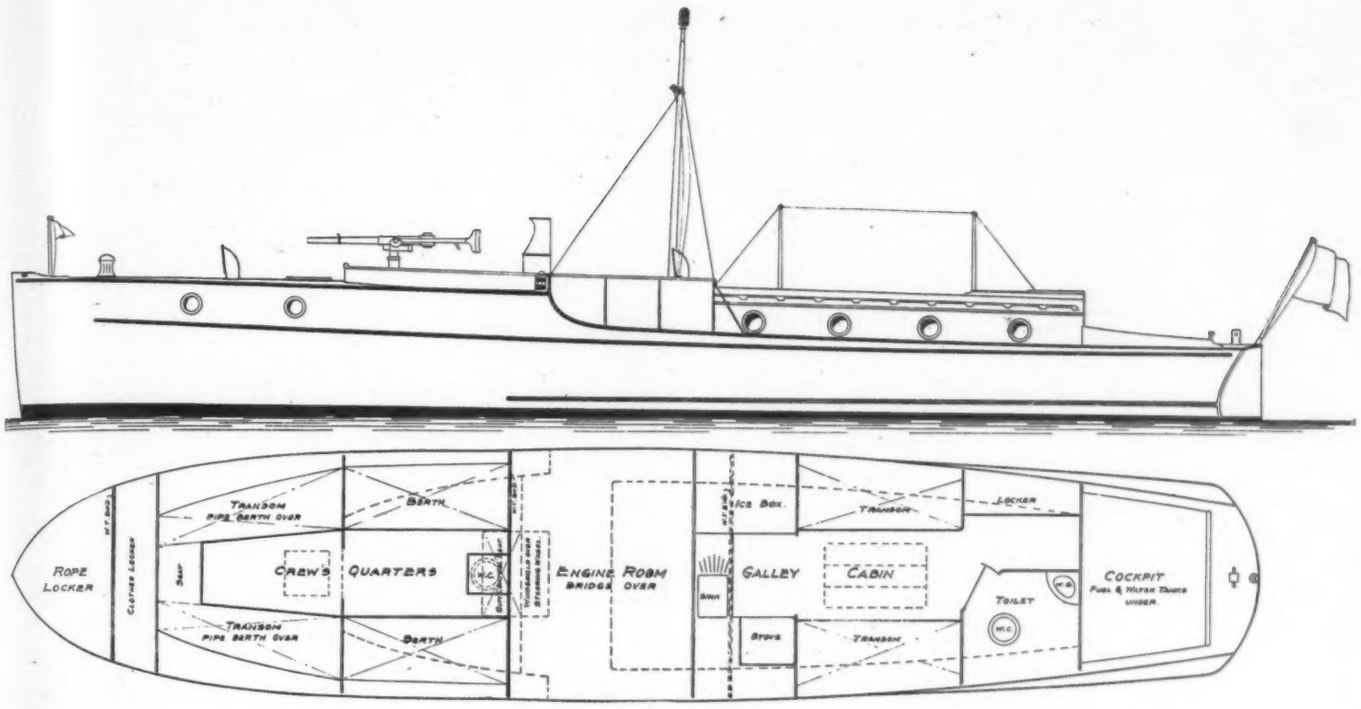
The feature of the boat is the unusually large and roomy deck house on top of which is the bridge deck and steering position. For winter cruising a small pilot house will be fitted to enclose the steering position, but in summer it has been deemed advisable to have the open bridge deck. The deck house has the main saloon in the forward end, 16 feet by 14 feet. There are no doors leading directly from this saloon, but there is a door from the lobby abaft it, opening on the main deck from either side. The advantage of this is to keep the rain and dampness out of the main saloon and the dining room which is abaft the lobby. The dining room is 14 feet square, and has two recessed buffets at the after end, and a serving table, corner cupboards and open fire place as shown. Abaft the dining room is a large pantry 8 feet 9 inches by 14 feet, with store room, ice box, sink and lockers, etc. The compartment at the after end of the deck house is a smoking room, open at the after end in summer and so arranged that it can be enclosed in winter.

The arrangement below deck shows five large staterooms, each stateroom with two beds, a bureau, wardrobe, transom and wash basin. There are also two bathrooms and a passage connecting the forward stateroom with the main staircase leading up to the lobby. The galley is below decks and is equipped with all modern conveniences. The power plant consists of two 160 h. p. Speedway motors. The crew's quarters are unusually spacious, there being bunks for five men,

The material and finish on this vessel are the finest procurable. The deck house and deck joiner work is of panelled Honduras mahogany while the owner's quarters below are finished in cream colored panelling trimmed with mahogany.

Hints on Painting

Preliminary to painting, wash the house top, sides, decks, and top sides, so preventing any of this dirt from washing down in the event of rain and streaking the white paint about to be applied. Ready mixed paints especially prepared for yacht work are best to use as they are far better than any hand mixed paint and cheaper, when purchased in the small quantity needed for one boat. Two coats will be sufficient if the boat has not been burned off. It is always better to give two thin coats than a single heavy one, allowing plenty of time between coats for drying. Four coats are needed to cover bare wood and the first one should have a little black to tone the difference in color of the various planks and the discoloration caused by the burning torch.



An Interesting 50-Foot Patrol Boat Built in the West for Service in the Third Naval Reserve District

An out-and-out patrol cruiser is now being built by the Great Lakes Boat Building Corporation for Donald Ryerson, of steel company fame, of Chicago, who will officer his boat in the Naval Reserve Squadron.

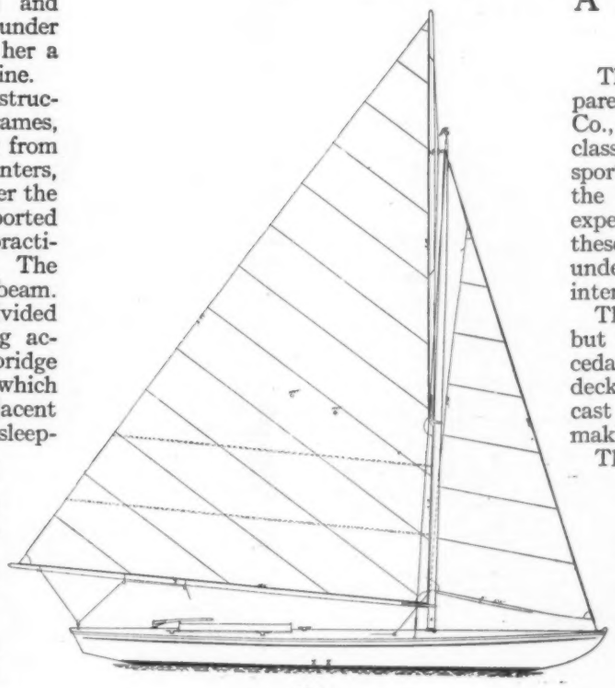
First of all, the cruiser embodies the essential qualities of seaworthiness and speed, which, together with a one-pounder forward and machine gun aft, make her a very dangerous enemy of the submarine.

The hull structure is practically indestructible by reason of the use of sawn frames, steam bent ribs, and battens running from stem to transom, all spaced on short centers, leaving no part of the planking over the size of the palm of the hand unsupported or unprotected. The design, in fact, practically means a double-planked boat. The cruiser is 50 feet overall, with 10-foot beam. The crew's quarters forward are divided into two compartments with sleeping accommodations for four, followed by a bridge deck and engine compartment, aft of which is the galley completely equipped. Adjacent to the galley is the main cabin with sleeping accommodations for two officers, following which is a submerged cockpit. This arrangement permits of complete enclosure of the engine with full head room throughout practically the whole compartment. All controls are carried to the bridge deck for one-man operation.

A depressed gun cockpit is arranged forward of the bridge, the floor of which is strongly reinforced to support a standard mounting for a one-pounder. Ammunition lockers are carried both on deck and in the crew's quarters so as to permit of rapid handling of the gun.

The galley, aft of the engine compartment, is complete in every respect including icebox, two-burner alcohol range with cover, and sink with running water. Ample locker space is provided for dishes, cutlery and provisions.

Mr. Ryerson's 50-footer will be powered with an 8-cylinder 6 by 6 Van Blerck motor which will give her a maximum speed of 25 miles per hour. This speed is most remarkable considering the fact that the cruiser is very heavily built so as to stand rough weather on the ocean, and that she carries very heavy weights and ordnance, water, gas and other equipment. The capacity of the gasolene tanks permits of a cruising radius of well over 500 miles. While Mr. Ryerson lives in Chicago, he has entered his boat in the Third Naval Reserve District out of New York, so that he can see immediate service.



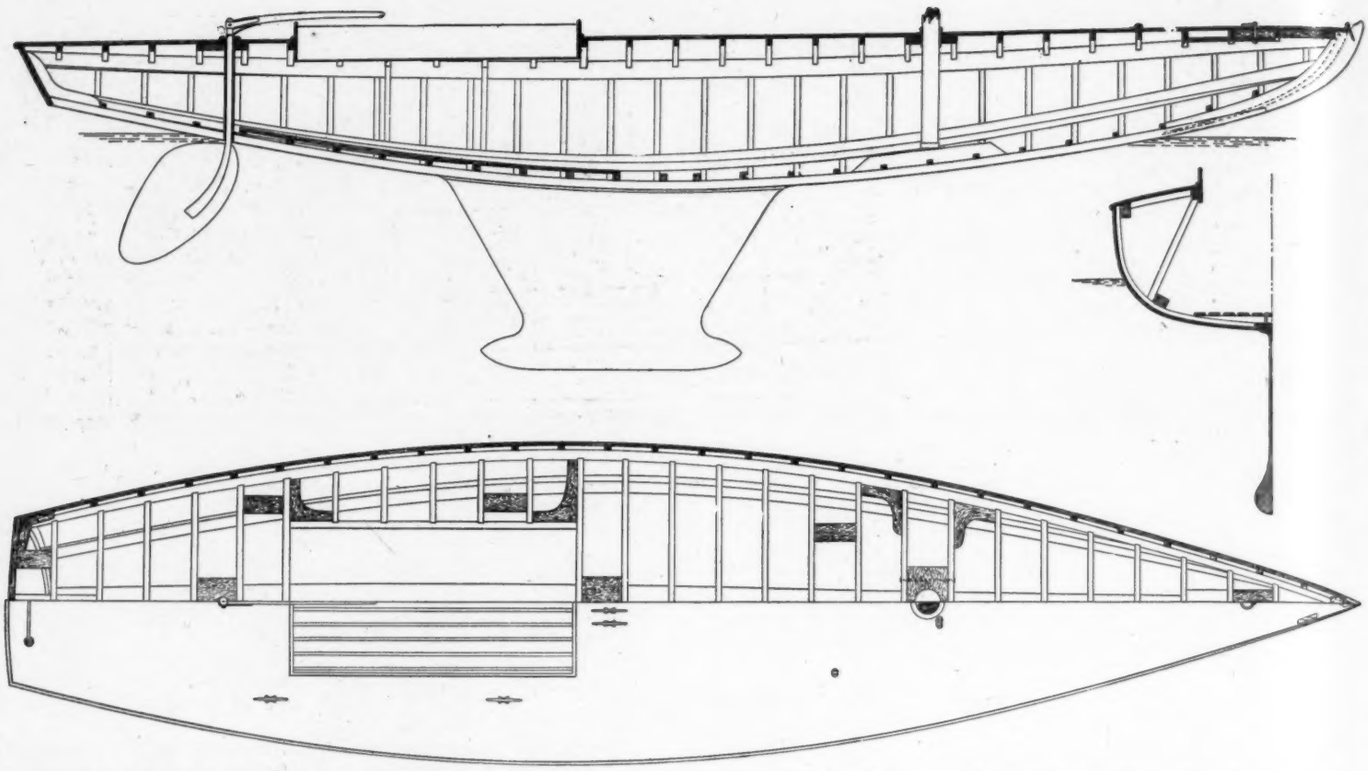
A 14-Foot W. L. One Design Knockabout

The accompanying design has been prepared by the Launch Exchange and Repair Co., Edgewater, N. J., as a one design class and offers much in the way of genuine sport at a cost per boat that makes possible the formation of club fleets, without the expenditure of a world of money—which in these times of high prices for everything under the sun makes the plan especially interesting.

The construction calls for substantial but light frames and planking of oak and cedar with fastenings of copper while the decks are canvas covered. The keel is of cast iron and weighs about 520 pounds making the craft practically non-capsizable.

The boat carries a gunter rig of 197 square feet which is sufficiently large to drive the craft at a fair speed and with all make her handling easy for the beginner.

The principle dimentions of these boats are—L. O. A. 19 feet 7 inches, L. W. L. 14 feet 1 inch, width 4 feet 7 inches and draft 3 feet 4 inches.



THE 14-FOOT W. L. KNOCKABOUT DESCRIBED ON THE PRECEEDING PAGE IS A CRAFT THAT IS LOW IN PRICE AND INEXPENSIVE TO MAINTAIN

A 50-Foot Day Cruiser

A boat that is somewhat different to the general run of day cruisers is shown in the plans herewith from the office of Tams, Le Moine & Crane, 52 Pine St., New York. The overall length is 50 feet, the width 9 feet 6 inches and the draft 2 feet 10 inches.

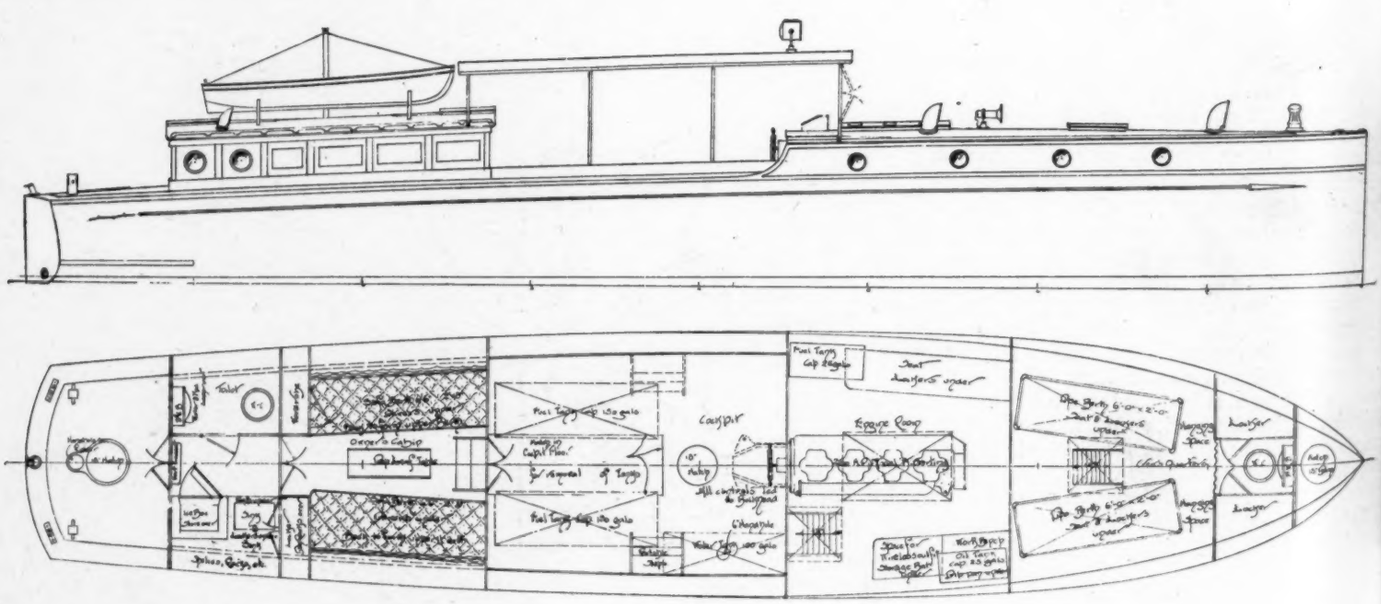
The specifications call for an oak frame with closely spaced ribs, yellow pine stringers and clamps with seam battened mahogany planking; the decks, excepting waterways, which are mahogany, being canvas covered.

For a boat of this type the accommodations are excellent, there being two pipe berths, lockers and a separate toilet room for the crew. The engine compartment is 8 feet long and houses an 8-cylinder 200 H. P. Model F Sterling motor with complete equipment that is equal to propelling the craft at a speed in excess of 25 miles an hour.

A cockpit 11 feet long with its floor well above the water line so as to be self-bailing allows a world of room for the helmsman and a number of wicker chairs. Gasolene tanks of 300 gallons capacity and a 100-gallon water tank are located below the cockpit floor well out of the way and not sacrificing useable room.

Under the 12-foot cabin house abaft the cockpit there is a snug little cabin with twin sofa berths, a drop-leaf table, wardrobe and clothes locker.

The after end of the house contains a completely equipped galley and toilet room separated by a passageway that leads to the short after deck which is flush with no rail around it.



Rochester Yachtsmen Active

THE Rochester yachtsmen who sail on Lake Ontario are going to be particularly busy this summer, largely through the efforts of the Genesee Dinghy Club, which for several years has kept interest alive on the Lake when the members of the Rochester Yacht Club and other boating organizations seemed inclined to let it die. This "live" bunch of sailors built up a big fleet of 12-foot racing dinghies in which they raced in all kinds of weather, and even cruised as far as to the St. Lawrence and Bay of Quinte, sleeping ashore at night either in their boats or in camp.

A number of new dinghies are being built for racing this year and there will probably be 25 or more boats on the water all told, most of the new boats being from the shop of Capt. E. A. Delano, who has credit for most of those boats already in the field. In addition to this, a number of the Genesee Dinghy Club members have gone in for the Star boats, while members of the Rochester Yacht Club have adopted the same design, and a large fleet of these sterling little craft will be seen off the mouth of the Genesee River.

The Rochester Yacht Club has also taken up the dinghies, and with these two classes and a class that the Rochester Canoe Club has under contemplation there will be lively times on the south shore of Lake Ontario.

The Rochester Yacht Club has challenged the Cleveland Yacht Club for a match race with the Star boats during the season for a trophy offered by the Cleveland Yacht Club, each club to be represented by a team of two boats. This will make a fine intersectional match and do much to stimulate interest in both boats and the water. The Cleveland Yacht Club will have at least six Star boats, while it is probable that the Rochester Yacht Club will have even more this summer. The races will be held off Rocky River, and the probable date will be late in August or early in September. The exact dates have been left for future consideration.

ON THE OPEN LAKE AT CHARLOTTE, WHERE THE WATER IS OFTEN ROUGH, THE 12-FT DINGHIES OF THE GENESEE DINGHY CLUB HAVE BROUGHT SAILING BACK ON LAKE ONTARIO

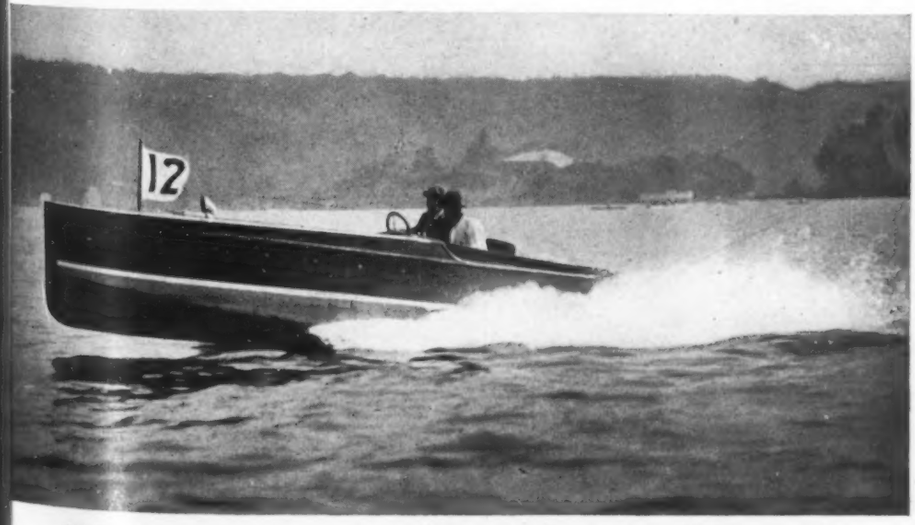
The officers of the Genesee Dinghy Club for the year are: Commodore, J. Everett Emerson; Vice-Commodore, Robert Ahrens; Fleet Captain, Ross Nagle; Sec'y-Treas., T. Albert Sharp. The Commodore has subscribed for one of the new Star boats and will thus be able to race one boat in each of the classes mentioned.

A Speedboat in Alaska

The average sailorman would not think of trying to do any boating with a high speed runabout on the Yukon in Alaska, but, just to show that it is a perfectly feasible proposition, Rex Beach took his 20-footer from Lake George to Alaska while he was writing his book *The Barrier*, and he says in sending us a picture of the boat that it "sure did cause some excitement as I sped up the Yukon against the current at a 25 to 30-mile speed."

"It always got a rise out of one man in particular," he writes, "old Sid Whaley, captain of the decrepit stern wheeler Sitka, which held the speed record for the river. This speed was never logged, but she was 'cal'ated' to do five knots an hour, and it always 'got his goat' when I went by him at thirty. Incidentally, this was about my only recreation while in Alaska and his only anguish. Perhaps the picture of the boat will interest some of your readers."

It certainly does, for it shows the possibility of using boats of this type on distant waters when the craft is small enough to be shipped on a car, the average car taking boats up to 32 feet in length. With a summer coming on in which certain parts of the Atlantic Coast will be barred, yachtsmen ought to take advantage of the opportunities offered for seeing something of the inland waterways of the country, even though they cannot be reached by direct water route.



REX BEACH, FAMOUS AS THE AUTHOR OF "THE BARRIER", DROVE THIS 30-MILER ON THE ICY WATERS OF THE YUKON

Barred Zones for the Principal Harbors

Certain barred defensive zones on the coast, guarding the approaches of the principal harbors, have been announced by the Government. Those that affect the principal yachting centers are given below. It is probable that the term "barred zones" means that the waters are mined, but there is always a channel through the mine fields which large vessels can take under proper direction or pilotage and after having received permission from the patrol at the harbor entrance.

A vessel desiring to cross a defensive sea area shall proceed to the vicinity of the entrance to the proper channel, flying her national colors, together with International Code number and pilot signal, and there await communication with the Harbor Entrance Patrol. It is expressly prohibited for any vessel to enter the limits of a defensive sea area otherwise than at a designated entrance and after authorization by the Harbor Entrance Patrol.

Boats and other craft employed in the Harbor Entrance Patrol will be distinguished by the Union Jack, which will be shown from a position forward; they will also fly the usual naval pennant. At night they may show a vertical hoist of three

lights—white, red and white, in the order named.

On receiving permission from the Harbor Entrance Patrol to enter a defensive sea area, a vessel must comply with all instructions as to pilotage and other matters that she may receive from proper authority.

No permission will be granted to other than a public vessel of the United States to cross a defensive sea area between sunset and sunrise, nor during the prevalence of weather conditions that render navigation difficult or dangerous. A vessel arriving off a defensive sea area after sunset shall anchor or lie-to at a distance of at least a mile outside its limits until the following sunrise; vessels discovered near the limits of the areas at night may be fired upon.

SPECIAL REGULATIONS FOR SMALL CRAFT

All matters pertaining to fishery and the passage of small craft within a defensive sea area shall be regulated by the senior officer of the Harbor Entrance Patrol.

These regulations are subject to modification by the senior officer of the Harbor Entrance Patrol when the public interest may require; and such notification as circumstances may permit will be issued regarding modifications thus made.

THE RESTRICTED AREAS

BOSTON

Outer Limit—A line from Strawberry Point to Spouting Horn. Inner Limit—A line west tangent Sheep Island to wharf on east side of Long Island. Line from wharf west side Long Island to large wharf west side of Beer Island.

NEW BEDFORD

Outer limit—Arc of circle centre the east point of reef off Clark Point, radius distance to Dumping Rocks Lighthouse. Inner Limit—A line between Butler Flats Light and Egg Island Beacon.

NEWPORT

Outer Limit—Arc of circle with Beaver Tail Light as centre and radius of two (2) nautical miles. Inner Limit—Fort Adams fog bell to north tangent of North Dumping. East and west line through Plum Beach Light.

LONG ISLAND, EAST

Outer Limit—A line joining Watch Hill and Montauk Point Lights. Inner Limit—Line joining Plum Island Light and Mumford Point.

NEW YORK, EAST

Outer Limit—Line joining Execution Rocks Light and east tangent of Huckleberry Island. Inner limit—A line north (true) through Whitestone Point Light.

NEW YORK, MAIN ENTRANCE.

Outer Limit—Arc of circle centre Romer Shoal Light, radius six (6) nautical miles. Inner Limit—Line west (true) from Flag-pole on wharf at Fort Hamilton.

DELAWARE RIVER

Outer Limit—East and west line through north end of Reedy Island. Inner Limit—East and West line through Finn's Neck Rear Range Light.

CHESAPEAKE ENTRANCE

Outer Limit—Line parallel to that joining Cape Henry Light and Cape Charles Light and four (4) nautical miles to eastward thereof, and the lines from Cape Charles Light and from Cape Henry Light perpendicular to this line. Inner Limit—Line parallel to line joining Cape Henry Light and Cape Charles Light and three (3) nautical miles to westward thereof.

BALTIMORE

Outer Limit—Line from Persimmon Point to Love Point. Inner Limit—Line joining Leading Point Range Light (rear) and Sollers Point.

PILOT, 30-FOOT CLASS, JACKSON PARK YACHT CLUB

Naval Activities Boom Yachting in Chicago, Action Certain in War or Racing

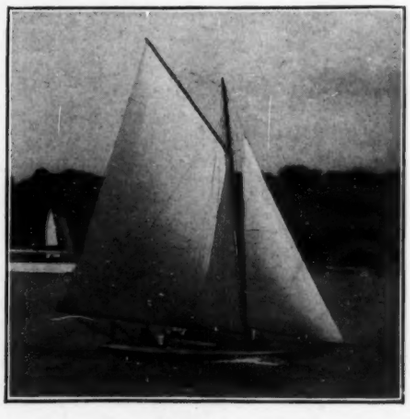
Heeding a request from Uncle Sam that all yachts and power boats be placed in commission as early as possible this year, Chicago's amateur sailors are preparing for a summer of action. Boats which usually have not been in the water before the latter part of May or early in June will be ready by the last of April and it is expected to be the longest yachting season on record.

Chicago's place in yachting circles was clearly defined during the past week when naval officers prepared to commandeer available craft for coast and submarine patrol. This city, in two days, offered one-third as many craft as the entire Atlantic Seaboard, and naval officers estimated that there are 1,500 able-bodied men with a substantial knowledge of navigation and seamanship available in Chicago alone. Each of these men, it was said, is capable of commanding a power cruiser with a handful of less experienced men.

Ship Yards are Busy

National interest being aroused in nautical affairs of this kind, it is only natural that these 1,500 Chicago mariners and their many "pals" should anticipate plenty of action this summer. They are already longing for open water, and at the South Chicago and north branch shipyards, are taking advantage of the mild weather.

The Jackson Park Yacht Club, as usual, will be the first of the Lake Michigan organizations to start the season. This Club has grown rapidly in number and quality of boats the last few years, and with the addition of the Snite-Barcal sloop Intrepid, Otto Schoenwerk's sloop Hobo and the new one-design class, it is likely that many of the sailing contests of the year will be won under the blue and white burgee. The new class that will appear at Jackson Park this summer is the design of A. A. Amundsen and the boats measure twenty-five feet in length. It is expected to prove a great boat for off-shore cruising. Eastern yacht clubs have boasted a craft very much the same in their Star Class. Six of these yachts are under construction and should bring out some splendid racing.



ST. CLAIRE, 30-FOOT CLASS, JACKSON PARK YACHT CLUB

The Jackson Park Harbor has been dredged to a depth of 16 feet, affording ample anchorage for all big keels.

Memorial Day is the usual date for the opening of nautical activities and on or before that time each and every boat should be ready for a season of hard racing.

It is reported that two Jackson "Parkers" will have class R boats in the going this year and will endeavor to win the Lipton Cup for the South Side Club. The last time the cup was in open competition it was captured by A. A. Bennett of Jackson Park sailing the 21-foot Lipton Class Sloop, Susan II. For years the Southsiders have been accounted among the best canvas handlers on the Lake. In the Lipton Contest of late years they have been represented by boats, and in spite of the fact that the cup has been taken away from the 21-footers they expect to do just as well handling the Universal Rule boats.

In the thirty-foot class on Lake Michigan there is always good racing and their headquarters are at Jackson Park harbor. It is the largest class on the lake.

The officers of the Jackson Park Yacht Club for the year 1917 are as follows:

Commodore, P. J. Slagle; Vice-Commodore, C. H. J. Thorby; Rear Commodore, O. P. Alford; Secretary, J. P. O'Rourke; Treasurer, Robt. I. Elmers; Chairman Regatta Committee, Lawrence V. Teesdale.

The racing schedule for Lake Michigan is found in another column.

Star Boat for Maumee River Yacht Club

When the little old Star Class bursts in all its glory into inter lakes sport, M. R. Y. C. will be there with the usual joyful shout. Mr. Billingslea announced the other day that two of the non-sinkable, non-capsizable racers had been certainly promised and a third was almost assured.

From down the river, comes an unofficial report that the Toledo Y. C. will also adopt the class and be represented. Whisper connects George King's name with one of the boats.

Rochester and Cleveland Clubs are already discussing a dual meet for this class, and Detroit is more than strongly tempted. Indeed, it is not at all unlikely that the Interlakes moguls will adopt the class and enter it in the big meets.

Lake Michigan Yachting Association

At a recent meeting of the association, it was decided to let the R boats compete for the Lipton Cup this year. The date will be probably August 23d, 24th and 25th, or September 1st, 2d or 3d. The lower lake sailors assure us that the following R boats will enter:

Pam, owner, Commodore H. A. Parsons; Clarice, owner, Commodore Alex. Winton; Mebleh, owner, Commodore, W. R. Huntington.

The South Shore Yacht Club of Milwaukee has a new boat named South Shore, which will probably compete, and Chicago will be represented by Maia, now owned by Mr. George H. Spies, of the Lincoln Park Yacht Club, and new boats now being built for Commodore Ogden T. McClurg and Mr. Samuel Dauchy, who formerly owned XXIX and Maia.

Officers of the Columbia Y. C.

On February 10th the life members of the Columbia Yacht Club, of Chicago, elected the following ticket:

Commodore, C. H. Morgan; Vice Commodore, H. D. Moreland; Rear Commodore, D. W. MacDonald; Secretary, F. B. Wever; Treasurer, M. J. Bates; Directors, F. D. Porter, H. L. Diehl, J. F. McGuire, John Mooney.

Yachting and Yacht Club News

Prepare your Navigation for the Reserve

In order to make themselves qualified for enrollment in the Naval Coast Defence Reserve, particularly for a commission as ensign or junior lieutenant, or in the higher enlisted ratings, every yachtsman should brush up on his navigation and should really endeavor to qualify himself in those elements of pilot water navigation with which he is not already familiar. One of the best books with which to do this is Pilot Water Navigation, a publication which YACHTING published a short time ago. This is by Commander C. S. Stanworth, U. S. Navy, and, while written primarily for yachtsmen, is written from the standpoint of a naval officer who knows the navy method of doing things. The book goes into matters with characteristic thoroughness, although in a very interesting way and in a way that is perfectly clear to every yachtsman.

He takes up chart work, dead reckoning, the compass and its corrections for deviation, soundings, navigating in fog, allowances for tide and currents, the weather, etc.

Already a number of instruction classes for the Coast Defence Reserve have taken up this book for instruction purposes, and we will be glad to make a special price in supplying it to other organizations who may want to use it.

Commander Stanworth is at present assigned to the Commandant's Office of the Fifth District, with headquarters at Norfolk, Va.

Elections at the Columbia Y. C.

At the Annual Meeting of the Columbia Yacht Club, held on March 6th, 1917, the following officers were elected:

Commodore—Fred Berg; Vice-Commodore, Coleman Dupont; Rear Commodore, Charles A. Schieren; Secretary, George R. Branson; Treasurer, Charles Green Smith; Trustees, Walter Lüttgen; Joseph S. Whiteside and Chester Alexander; Measurer, Charles O. Gunther.

Officers of the National Association

At the March meeting of the Executive Committee of the National Association of Engine & Boat Manufacturers, held at the Engineers' Club, 32 West 40th Street, New York City, the following officers were re-elected for the ensuing year: President—John J. Amory, of the Gas Engine & Power Company and Chas. L. Seabury & Co., Consolidated, Morris Heights, New York City; First Vice President, Henry R. Sutphen, of The Elco Company, Bayonne, N. J.; Second Vice President, Percy C. Jones, of the S. M. Jones Company, Toledo, Ohio; Third Vice President, Charles A. Criqui, of the Sterling Engine Company, Buffalo, N. Y.; Treasurer, James Craig, of the James Craig Engine & Machine Works, Jersey City, N. J.

The report of Mr. Henry R. Sutphen, chairman of the exhibition committee, showed that the 1917 New York National Motor Boat Show, held recently in the Grand Central Palace, was the most successful exhibition ever held under the auspices of the association. Increases were made in attendance figures, in amount of space sold to exhibitors and in actual sales made during the progress of the Show. Fifty-nine complete boats were on exhibition, ranging in size from the small useful dinghy to the new type sixty-foot motor patrol boat with her complete armament of rapid fire guns.

New Officers for the Philadelphia Y. C.

The following officers were elected to serve for the ensuing year in the Philadelphia Yacht Club:

Commodore, Philip H. Johnson; Vice Commodore, J. Fred Betz; Rear Commodore, Robert J. Williams; Recording Secretary, S. W. Bookhammer; Measurer, Thos. F. Durham; Fleet Surgeon, Dr. T. Lewis Adams; Harbor Master, Thos. W. Boyd; Trustees, Geo. W. Fite, Otto Robt. Heiligman, S. B. S. Barth, Thos. F. Durham, Wm. A. Christy, Ed. K. Nelson, Arthur Bloch.

Vidofner II Sold

The twin-screw power yacht Vidofner II has been sold for the Estate of Richard Patzowsky, Wilmington, Del., to John Ringling of New York, through Cox & Stevens of this city. The Vidofner II was well-known under her former name Cynthia III. Her dimensions are 110 ft. overall, 20 ft. beam and 4 ft. draft. She was designed by Cox & Stevens for Merrill B. Mills, for cruising in Florida as well as Northern waters. Her accommodation is exceptionally large.

Power Yachts Presented to Government

The fast, twin-screw power yacht Sayonara II has been accepted for Patrol Service by the Boston Navy Yard from Charles Blum of this city, who has given the boat, fully equipped, to the Government. This craft will go into commission immediately. A son of the donor, Charles Blum, Jr., at Harvard University, has formed a unit which will operate the vessel.

The Sayonara II is a particularly fine yacht of her type, having been constructed last year by the George Lawley & Son Corporation, Neponset, Mass. for Mr. Thomas A. Howell of this city, from whom Mr. Blum just purchased her through the firm of Cox & Stevens of New York. Her dimensions are: length overall, 74 ft.; beam, 14 ft.; draft, 3 ft. 9 in. The power consists of two 6-cylinder, 4-cycle air-starting Speedway motors of 120 H. P. each, driving the boat at a speed of 15-16 miles per hour.

Steam Yacht "Irene" Sold

The fast, steel twin screw steam yacht IRENE has been purchased by Michael Dreicer, of New York, from Alfred P. Lasher, N. Y. Y. C., through Cox & Stevens, of this city. The IRENE'S dimensions are 155 ft. in length overall, 130 ft. waterline, 18 ft. beam and 7 ft. 6 in. draft. She is powered with triple expansion engines which drive her at a speed of 17-18 miles per hour on forced draft.

The owner's accommodations include dining saloon in forward deck house, social hall in after deckhouse and five staterooms aft (all finished in white mahogany).

The yacht will be used on Long Island Sound and adjacent waters by her new owner during the coming season.

Some Recent Yacht Sales

The Hollis Burgess Yacht Agency, of Boston, has sold the 55-foot motor yacht Cheechako owned by Ingersoll Amory of Manchester, Mass., to John J. Martin of Boston. Mr. Martin has renamed this boat Wasaka III and he will give her to the Government for use as a coast patrol boat.

The same Agency has also sold the following yachts:

The 42-foot waterline schooner yacht Ondawa, owned by Roger Upton, of Marblehead, Mass., to C. D. Vail of New York; the 105-foot Diesel engine fishing boat W. C. T. U., owned by Gorton-Pew Fisheries Company to the Howard Lumber Company; the 25-foot motor boat Gray Duck owned by Benjamin F. Wild of Boston, to Rev. Endicott Peabody of Groton, Mass; the Herreshoff 21-foot waterline sloop Gadfly owned by S. L. Gookin of South Boston to Frank Hail Brown of Providence, R. I.; the 36-foot waterline sloop yacht Ranger owned by Howland Twombly of Boston, to Arthur Moody of Boston; the 41-foot motor boat Ecila owned by Kilby P. Smith of Waltham, Mass., to William W. Oakes of Winthrop, Mass.; the 28-foot waterline yacht Al Kyris owned by Arthur Moody of Boston, to a prominent Marblehead yachtsman; the Herreshoff 30-foot waterline sloop yacht Notos owned by T. H. Smith of Chester, Conn., to Walter Seymour of Providence, R. I.; the 40-foot waterline schooner Whileaway owned by Robert E. Traiser of Boston, to Joseph Boyer, Jr., of Detroit, Mich.; the 15-foot waterline racing sloop Hoorah owned by John H. Schell of Detroit, Mich., to Harry H. Wiggin of Boston; the 70-foot motor yacht Early Dawn V owned by Joseph E. Doherty of Boston, to Homer Loring of Boston; the 55-foot motor yacht Totem owned by Joshua Crane of Boston to the Portland Products Company of South Portland; the 30-foot motor boat Elizabeth E. owned by P. W. Elliott of Boston, to Nathaniel Kinsman of Rowley, Mass.; the Sloop yacht Betsy owned by Endicott P. Saltonstall of Boston, to Albert E. Snowman of Philadelphia, Pa.

Navy Department Wants Ship Draftsmen

The need of the Navy Department for ship draftsmen is urgent to the last degree. Millions of dollars are available for new ships that have been authorized and for facilitating construction already begun, but all of this shipbuilding work undertaken at government yards is retarded by a shortage of ship draftsmen.

In order to get as many men as possible at this crisis, and to fill the many vacancies that now exist, the U. S. Civil Service announces an open examination for ship draftsmen, for men only. The competitors will not be required to report for examination at any place and, until further notice, applications will be received at any time. Applicants will be rated on the following subjects which will have the relative weights indicated on a scale of 100. Physical ability 10%. Education, training, experience and ability 90%. Papers will be examined immediately upon their receipt by the Commission and a grade or rating in that grade will be assigned the competitor. Those who qualify will be offered employment at once. Application blanks may be obtained from the Civil Service Commission, Washington, D. C.; Form 1312.

Here's a chance to help the government in the best way possible for those who are specially qualified, the services thus rendered being much more valuable to the government than if the same applicant enrolled for active service afloat.

Eligibles will be divided into four grades as follows:

GRADE 1, $3.28 TO $4 PER DIEM.

Applicants must have the education, training and experience as specified in one of the following groups:

(*a*) Graduation from a technical school or college of recognized standing, with one year's experience in shipbuilding.

(*b*) Graduation from or in senior year in the naval architecture course of a technical school or college of recognized standing.

(*c*) Three years' experience in shipbuilding, one year of which must have been in the drafting room.

GRADE 2, OVER $4 TO $5.04 PER DIEM.

Applicants must have the education, training, and experience as specified in one of the following groups:

(*a*) Graduation from a technical school or college of recognized standing with three years' actual experience in ship drafting.

(*b*) Graduation in naval architecture from a school or college of recognized standing with one years' experience in ship drafting.

(*c*) Five years' experience in shipbuilding, three years of which must have been spent in the drafting room.

GRADE 3, OVER $5.04 TO $6 PER DIEM.

Applicants must have the education, training, and experience as specified in one of the following groups:

(*a*) Graduation from a technical school or college of recognized standing with five years' experience in ship drafting, two of the five years having been spent on original work of general character under nominal supervision.

(*b*) Graduation in naval architecture from a school or college of recognized standing, with three years' actual experience in ship drafting, two of the three years having been spent on original work of general character under nominal supervision.

(*c*) Not less than seven years' experience in ship drafting, two of the seven years having been spent on original work of general character under nominal supervision.

GRADE 4, OVER $6 PER DIEM.

Applicants must qualify under one of the groups of the $5.04 to $6 per diem grade, and, in addition must have been for at least one year in a supervisory ship-drafting position.

Of Interest to the Skipper

Sterlings in Holland

The average engine showroom in the United States is not a particularly attractive place, and it seems a mistake that the dealers do not think it necessary to display their wares in a little better way and amidst better surroundings. They might well take a lesson from the old world, and particularly from the agents of the Sterling Motor Company in Amsterdam, Holland—Gebrs. Willink, of 109-111 Weteringschans—who have been the exclusive handlers of Sterling Engines in Holland since 1910.

If the dealers in this country would only get something more like the showroom which is seen in the accompanying photograph, it would make a man feel, when he stepped into the place, that motor boating is a high class sport and something on which he would be willing to spend a good amount of money to secure the benefits to be derived therefrom. In 1911 this firm imported a 32-foot mahogany runabout from the United States, called the Fortuna II, powered with a 6-cylinder Sterling, for Mr. Hultzer, of Amsterdam, who writes as follows about the boat:

"Since 1912 I am the owner of the motor boat Fortuna II, built by your company and I avail myself of this opportunity to frankly admit that your boat is excellent in all respects and praiseworthy. It has completely answered my high strung expectations.

"In all matches she carried off the first prize and until now the Fortuna II is still the champion of the open motor boats of the Netherlands. People often tried to copy the model, but none of them has succeeded. The copies are much like but not the same, and I am glad to state that no one can be compared with your stylish model, which does credit to the builder."

This gives a good idea of what Mr. Hultzer thinks of boats and engines built in the U. S.

The Van Blerck Boat Book

As an interesting and artistic piece of literature, The Boat Book recently published by the Van Blerck Motor Co. takes first place in the year's output of boat and engine literature, and it is a safe bet that any man who reads it and is not already a boat enthusiast will have his imagination so fired as to make him start on a still hunt for the best boat that his bank account will stand.

This book is a compilation of photographs of recent boats built and powered with Van Blerck motors. It contains both exterior and interior pictures of 42 modern boats of all types, both the pictures themselves and the reproductions being works of art.

There is a wide range of types shown—from the fast day cruiser or runabout to the 109-ft. auxiliary schooner Mariette, among the boats being the Whippet, a 60-footer owned by Mr. O. G. Jennings, with a speed of 27 miles an hour, the Luders-designed 36-footer Amargo, owned by Mr. A. Chesebrough, Mr. John M. Goetchius' Kingfisher, The Great Lakes Boat Building Cor's 40-footer Marguerite II, owned by Mr. H. C. Good, Wm. H. Hand's record-breaking express cruiser Countess —the U. S. Government's patrol boat designed by A. L. Swasey last summer, and many others. It is interesting to note, also, that of the 42 boats depicted, 16 are owned by subscribers of YACHTING, showing that they appreciate high grade craft.

As an exposition of what has been accomplished in the yacht and engine building field in the last few years, this book is very complete and either to the expert boatman or the novice will prove most interesting.

The book is in no way a catalog and does not give details of motors but is merely intended to show the wide variety of type and the high grade of boats in which Van Blerck motors are installed.

The Complete New Gray Catalogue

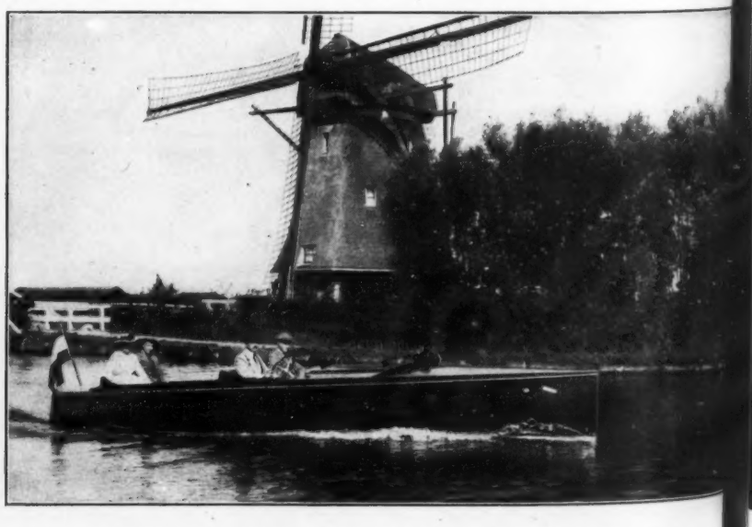
An exceptionally attractive and comprehensive catalog of marine engines is the one just turned out by the Gray Motor Company, Detroit, Michigan, the well known manufacturers of two- and four-cycle marine engines. This catalog consists of thirty-two pages, printed in two colors, and profusely illustrated. The cover design shows an artist's dream of a Model "D" four-cycle four-cylinder 20-24 H. P. engine on the back of a dolphin and under the control of a bewitching mermaid. The interior of the book describes the well known Gray efficiency, methods of manufacture and then takes up each engine of the Gray line in detail. This consists at present of both two- and four-cycle engines, the Model "U" two-cycle machine being made in four sizes as follows: Single cylinder 3 H. P. and 5½ H. P., double cylinder 6 H. P. and 11 H. P. These engines are sold with complete outfits for either fresh or salt water and the prices are exceedingly attractive.

The Gray four-cycle line is rapidly becoming better known on account of the remarkably good results which they are giving in boats in which they are installed in all parts of the country and in every country in the world. The well known Model "F" 12-15 H. P. four-cylinder Gray is prominently featured in the new catalog with a double page center spread, followed by two pages of more technical descriptive matter with specifications, installation diagram, lubrication diagram, and prices with accessories. This engine has been adopted by the Gas Engine & Power Co., and Chas. L. Seabury Co., Consolidated, as the most suitable motor for their 16 ft., "Speedway" yacht tender and the Gray Company report orders for about a dozen of these motors for these high-grade yacht tenders.

The well known Model "B" two and four-cylinder Gray motors are next discussed in detail in the catalog with excellent illustrations. The inside back cover of the catalog is given over to a power-curve sheet of all the present Gray Models, while on the back cover is depicted ten typical types of motor craft, for which Gray engines are suited. No better way can be shown than these illustrations to prove that there is a Gray for every boat. A list of prominent boat builders and naval architects who endorse the Gray are also given on the back cover.

We strongly urge every one of our readers who is contemplating a marine engine to send for the new Gray catalog. Address 558 Oakland Avenue, Detroit.

THE ATTRACTIVE SHOW ROOMS AND STORE OF GEBRS. WILLINK, 109-111 WETERINGSCHANS, AMSTERDAM, WHERE STERLING MOTORS ARE SOLD IN HOLLAND



FORTUNA II IS A 32-FT. AMERICAN BUILT AND STERLING POWERED RUNABOUT THAT IS THE CHAMPION OF THE OPEN BOATS OF THE NETHERLANDS

A Lesson In Tennis Ball Anatomy

This is a tennis ball clinic. We want to show you *why* Goodrich Tennis Balls are more responsive, accurate and put more into your game.

Note carefully these three crowning points of *superiority:*

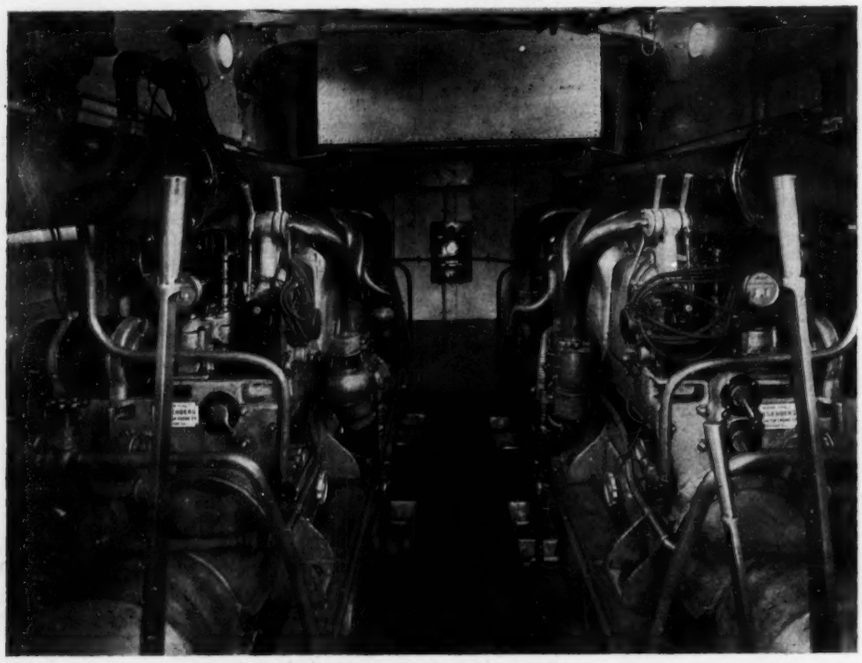
1. **Heaviest, closest woven cover used on any ball.**
2. **A cover doubly protected against loosening—understitched on by hand and inseparably cemented.**
3. **A rubber center that stays lively under smashing play.**

You may find good covers elsewhere, or rubber centers that stay lively. But if you want to be sure that you have *all three*—if you would put the utmost into your game with an accurate, responsive ball that *lasts longer*, you'll play Goodrich Tennis Balls.

Try a pair—if your dealer can't supply you, drop us a card. Approved by U.S.N.L.T.A.

The B. F. Goodrich Rubber Company
Akron, Ohio

GOODRICH
1917 "CHAMPIONSHIP" TENNIS BALLS



A PAIR OF 8-CYLINDER 6¾" X 7¾" DUESENBERG MOTORS INSTALLED IN ONE OF THE 60-FOOT SUBMARINE CHASERS RECENTLY PURCHASED BY THE U. S. NAVY DEPARTMENT

Duesenberg Motors Corporation

One of the most interesting recent events in the manufacturing field is the formation of the Duesenberg Motors Corporation of New York City with a cash capital of $1,050,000 fully paid in. The new corporation succeeds and takes over the business of the Loew Victor Engine Co., of Chicago, and the Duesenberg Motors Company, of St. Paul. It will build on a commercial scale the highly efficient motors designed by Fred S. Duesenberg for marine, automobile and aeroplane service. A number of contracts already have been closed with some of the most prominent builders of high class motor boats, automobiles and aeroplanes, and production is organized on quite a large scale. The engines manufactured by the Duesenberg Motors Corporation are essentially for those who can afford and demand the best. In each instance they are high powered, high speed and high efficiency power plants, and already a number of well known yachtsmen have purchased Duesenberg motors for installation in their motor patrol boats and seaplanes.

The marine models of the Duesenberg Motors were brought out nearly two years ago by the Loew Victor Engine Co., of Chicago, and have been in successful operation for some time. The volume of business on these motors has been large for better than a year, until now they are one of the biggest factors in the marine engine field. The marine engines are made in two sizes, a six-cylinder, 6¾ x 7¾ inches—and an eight cylinder—6¾ x 7¾ inches, developing from 200 to 400 horsepower. Those two engines will be manufactured in the Chicago plant of the Duesenberg Motors Corporation, and this plant will do nothing else but produce these marine motors.

The automobile and aeroplane engines manufactured by the corporation are being built at the new plant located at Edgewater, N. J. As this plant had recently been making munitions its equipment was almost ideal for the manufacture of motors of the Duesenberg type, and it was only necessary to make a few changes in machinery and equipment to make it a highly efficient unit.

The stockholdership of the Duesenberg Motors Corp., is in the hands of some of the best known men in business and financial circles of the United States. The officers of the new corporation are as follows: President, J. B. Harbeck; Assistant to the President, E. P. Decker; Sec'y-Treas., H. A. Wing; V. President, Charles Stollberg; General Manager, in charge of manufacturing, Chas. B. Page; General Sales Manager, N. G. Rost; Chief Engineer, F. S. Duesenberg; Assistant Engineer, A. S. Duesenberg; Asst. Engineer and Naval Architect, Morris M. Whitaker.

Mr. J. R. Harbeck has been President and Managing Director of the Loew Victor Engine Co. for the past three or four years and it was under his active management that the Duesenberg Motor was developed for marine and aeroplane purposes. Mr. Harbeck will devote even more of his personal time and attention to the affairs of the Duesenberg Motors Corp. than he did to those of the Loew-Victor Eng. Co.

Each of the three types of motors will be built on the same general design, differing only enough to adapt them to their individual requirements. The Duesenberg design has proved itself in actual service for a number of years. Better than 50 percent. of all racing cars on American speedways in 1916 were equipped with Duesenberg Motors. Duesenberg Motors were installed in the first motor boat to make a mile-a-minute speed. Duesenberg motors were installed in the boat that won the displacement runabout race at the Miami Regatta this year and Duesenberg Motors are installed in seaplanes now in the service of the U. S. Navy. All motor boatmen will be interested in the success of the new Corporation, which is one of the largest in the marine engine field.

The cut herewith shows a typical Duesenberg installation in one of the 60-foot submarine "chasers" built by the Greenport Basin & Construction Co. for the Russian Navy and several of which have been recently purchased by the U. S. Navy Dept. The power plant consists of two 8-cylinder 6¾ x 7¾-foot-Duesenberg Patrol engines; turning at 1,250 r. p. m. they drive these boats 30 miles per hour. The installation is unusually compact and efficient.

E. N. Burwell, N. A. Goes Into New Offices

Elliot N. Burwell announces that he has moved his offices from the Paddock Building, 101 Tremont Street, to new and larger offices at No. 156 State Street, Boston, Mass., Room 51.

A Warship Gray Anti-Fouling Bronze Paint

For the craft of the patrol fleet as well as for vessels of every other description there is probably nothing, excepting a faulty power plant, that affects the speed of a boat so much as a befouled underbody. Trying to force a boat through the water with a growth of whiskers and barnacles in full bloom is almost equivalent, so far as making speedy progress goes, to towing a water-logged dink or a sea anchor while sailing.

In painting any part of the boat it pays to purchase the better grades of paints and the paints made for a special purpose. Nowadays if proper paints are used the boat's bottom offers but scanty feeding ground for marine parasites and all possibility of marine growths of any kind are removed.

Painting is the important thing, but painting with a better grade of paint and with paints that are made for special purposes solves the problem.

For a number of years Geo. Kirby, Jr. Paint Co., New Bedford, Mass., have been producing an anti-fouling bronze bottom paint made in three colors, red, green and copper, that successfully meet the many hard tests paints of this character are subject to.

With the coming of the war and the need for craft to patrol the coast, one of the requirements of which is a liberal coat or two of lead colored paint so as to reduce their visibility, the need presented itself for a bottom paint of sombre shade and anti-fouling properties. So a fourth color has been added to the bronze paints of Geo. Kirby, Jr. —Warship Gray—These bottom paints with flat and glossy warship gray paint for topsides complete a well rounded line from which may be selected a paint for any part of any type boat afloat and selected in the assurance that they are made of the finest materials and by paint makers with a reputation for sterling products.

A Car-load of Frisbie Motors

Recently a carload of Frisbie motors were shipped from the factory at Middletown, Conn. to Vancouver, B. C., for use on the Pacific Coast. This is concrete evidence that the popularity of Frisbie motors is on the climb.

Built in sizes that range from a one-cylinder 3 H. P. machine to one of 6 cylinders of 75 H. P., Frisbie motors are suitable for boats of any description. They all have a steady dependableness with plenty of reserve power whether it is for creeping along through an unfamiliar channel or breasting a head wind and sea homeward bound from a fishing trip off shore. Regardless of the boat's position or the weather conditions without, the dependable Frisbie remains on the job, its overhead values clicking the rhythm of its even power and testifying the motor as one of economical operation, reserve power and good design.

The many users of these machines will be glad to tell of their motor experiences and a post card to the Frisbie Motor Co., 7 Coll St., Middletown, Conn., will bring the address of those who live nearest and also a catalog of the "Friendly" Motor.

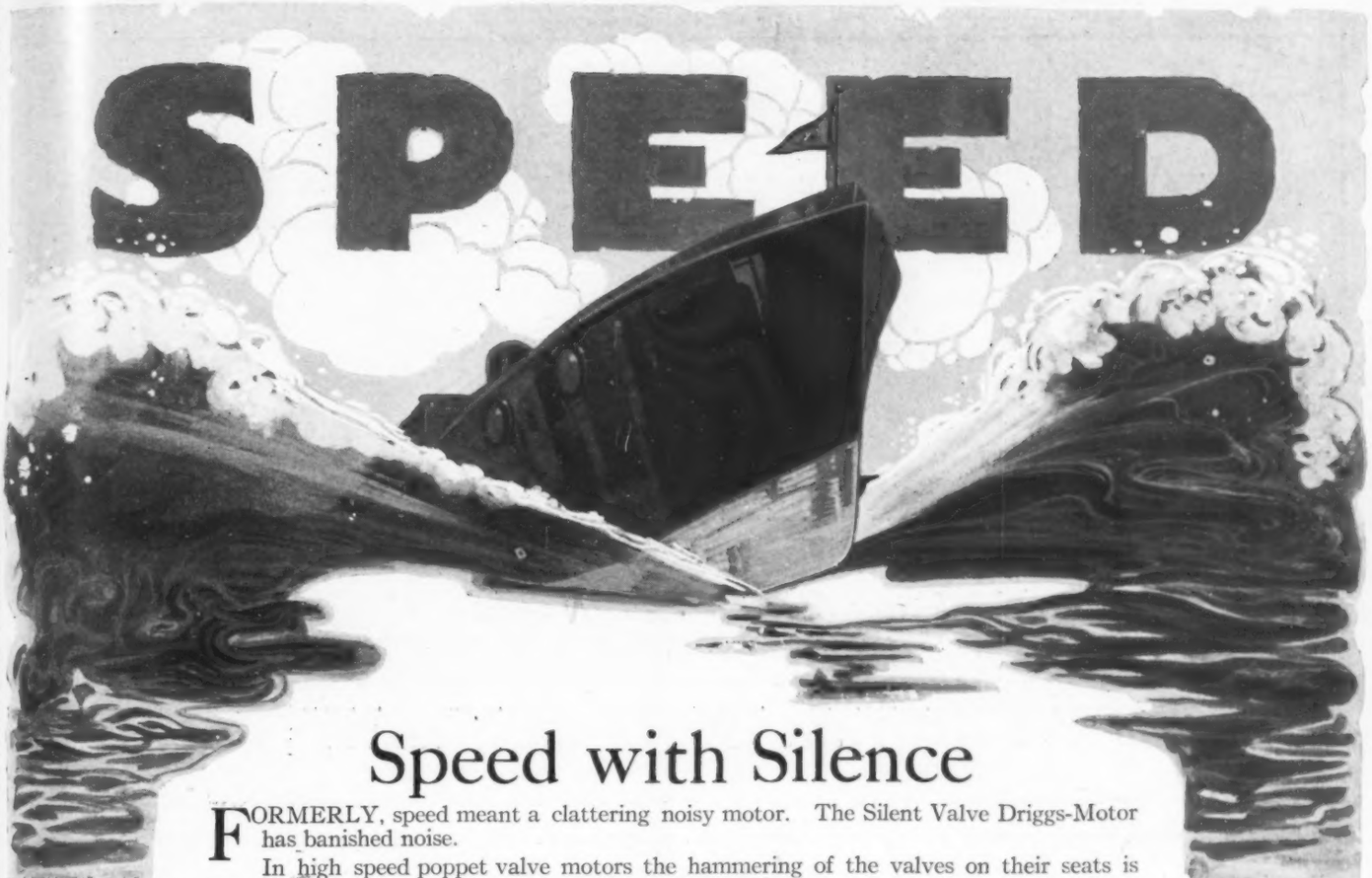
THE OVERHEAD VALVE FRISBIE MOTOR IS BECOMING AS POPULAR ON THE PACIFIC COAST AS IT IS NOW ON THE EASTERN

Dupont Fabrikoid Absorbs The Marokene Co.

The Du Pont Fabrikoid Company, with main offices at Wilmington, Del., has purchased the Marokene Company, of Elizabeth, N. J. The Marokene Company manufactures a material similar to fabrikoid, which is used extensively by the automobile, carriage and upholstery industries.

Mr. R. B. Heyward who had been assistant superintendent of the Fabrikoid Company's Newburgh plant will become superintendent of the Marokene plant at Elizabeth.

The purchaser will make thorough investigations in order to learn if any improvements can be made to the product and if possible will better same, thus upholding the Du Pont standard. All the sales transactions of the Marokene Company will be under the direction of the Wilmington office, and the attention of Mr. J. K. Rodgers, Sales Manager of the Du Pont Fabrikoid Company.



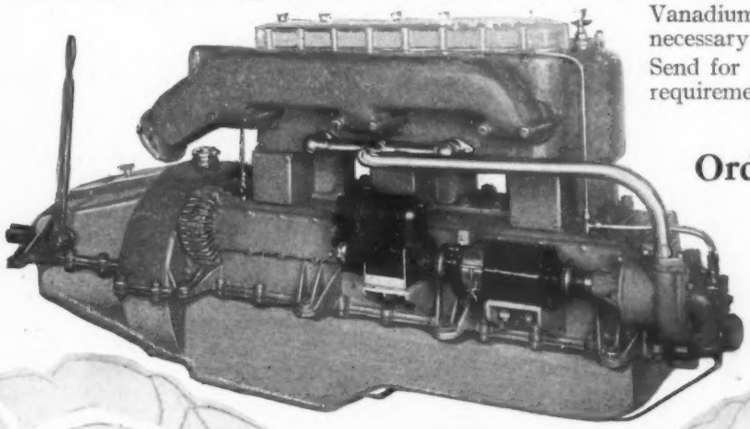
Speed with Silence

FORMERLY, speed meant a clattering noisy motor. The Silent Valve Driggs-Motor has banished noise.

In high speed poppet valve motors the hammering of the valves on their seats is the cause of constant harm to the parts as well as noise.

The rotary motion of the "Silent" valves eliminates the hammering of metal parts and the consequent noise and strain.

The Silent Valve Driggs-Motor in a speedy cruiser or runabout insures Speed *with* Silence.



Vanadium Steel is used where necessary to increase strength.

Send for catalogue and state requirements.

Driggs Ordnance Co.

120 Broadway
Dept. C
New York

SILENT VALVE DRIGGS

We Offer

BEST ANTI-FOULING PAINT

In WARSHIP GRAY COLOR
for Wood or Steel Vessels

also

HULL PAINT
OF BEST MATERIALS

Warship Gray Gloss -:- Warship Gray Flat

GEORGE KIRBY, Jr. PAINT COMPANY NEW BEDFORD, MASS. - U. S. A.

Powering the Cruiser and Runabout

A little booklet published by the Buffalo Gasolene Motor Co. of 1271-1283 Niagara Street, Buffalo, N. Y. that should be of great interest to the man looking for power for a cruiser or runabout is entitled "Powering the Cruiser and Runabout." This contains information concerning the Buffalo engines suited for the service mentioned and does not give the full Buffalo line. It includes the Buffalo cruiser and runabout type and the Buffalo auto marine, the former coming in two sizes, a 40-60 H. P., 4-cylinder 5½ inches x 7 inches, and 50-80 H. P. 4-cylinder 6¾ inches x 9 inches. Both the auto-marine types have 4-cylinders in 16-20 H. P., 3¾ x 5 inches and the other 25-30 H. P. 4¾ inches x 5 inches.

Recently a most complete catalogue embracing the complete Buffalo line has been issued. It is one of the finest books of its kind published and contains in addition to full details of the various Buffalo models, much general information concerning gasoline motors in general.

Get a Chelsea Clock for your Cabin

The difference between a boat that keeps ship's time with a Chelsea Clock and one that doesn't is that on the former you always know the *exact* time, and that this fact is announced by the clock itself in ship's bell style every half-hour, some of the models even striking automatically the ship's bell aft by the steering wheel, or forward, if desired.

At this outfitting season of the year when you are overhauling your boat for the summer afloat, why not see to it that your cabin equipment includes a Chelsea Clock? This is the clock that is found on every up-to-the-minute yacht and is the very highest product of the clock makers' art. For years the Chelsea clocks have been standard in that they were one of the first companies in the field making a clock to automatically strike the time in ship's bell fashion.

These clocks come in many styles, from a handsome bronze case with flange for mounting on a bulkhead, to mahogany cases, either for bulkhead or for standing on a flat surface, such as a buffet, table, desk, or the like.

The automatic ship's bell clock for operating the ship's bell can be placed either in the pilot house or cabin, and the connection is made by electric wires to either of the deck bells which it is desired to strike. In addition, this clock strikes a bell of its own and can be disconnected with the deck bells at will.

Besides these yacht clocks the Chelsea Clock Company make dash board clocks for motor runabouts or automobiles in waterproof and dustproof cases. Before buying your time keeping equipment, this year, you had better send to the Chelsea Clock Company, 16 State Street, Boston, Mass., for literature regarding their clocks.

Capt. Day In New Quarters

Every yachtsman will be pleased to hear that his old friend, Thomas Fleming Day, has outgrown his first ship on 33d Street and has abandoned that packet and commissioned a new and larger craft at 418 Eighth Avenue. The new ship has about five times the hold capacity of the old one, and will be loaded to the hatches with all kinds of craft and equipment. Captain Day will handle Toppan Dories, Skaneateles Row Boats, Keystone Outboard Boats and Tenders; Penobscot Canoes, Kennebec rowing craft, besides a number of sail and power boats built from the firm's new designs. All these boats are built under Captain Day's supervision, of selected stock, and are only sold after being thoroughly tested. The firm will also act as agents for Bonnet & Co., of Paris, carrying a full line of their model fittings. It will sell the Evinrude Outboard, and Gray, and Waterman inboard motors, also a full line of yacht hardware, cushions, flags, varnishes, paints, etc.

Wm. H. Hand, Jr. Tackles a Big Undertaking

Mr. Wm. H. Hand, Jr., of New Bedford, Mass., the well known designer of a large number of the faster of the great fleet of high speed cruisers that are destined to perform valuable service for the country in eliminating the submarine peril, has been appointed Assistant in the United States Shipping Board and will have charge of all the shipbuilding plants in New England producing wooden ships for the board.

Mr. Hand has the authority to confer and contract with shipbuilders on behalf of the Shipping Board and also to see that the labor and supplies are furnished to the builders within his jurisdiction. Some idea of the magnitude of his task may be learned when it is stated that there are 40 shipyards in New England equipped for doing this class of work and that the Administration has authorized the construction of a fleet of standardized wooden cargo vessels of 1,000, 2,000 and 3,000 tons each and hopes to have 3,000,000 tons at work before this time next year.

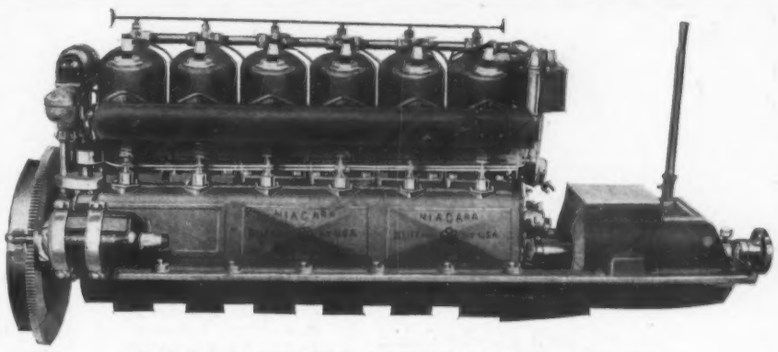
Not only is the wooden fleet expected to solve the war problem, but the United States, at the close of the war, will be well on the way to commercial supremacy of the world. The ships will endure for thirty years, and will form a basis for trade expansion following the war, which, it may be stated, is not the least of the factors considered in adopting the plan.

YACHT SAILS JOHN CURTIN, Inc. Tel. Broad 4263 2 SOUTH ST., N.Y.

NIAGARA MOTORS

have been in successful service over 11 years. That's because they have always measured up fully to requirements, whether for commercial, pleasure or speed hulls. They are of the "Four-Cycle" type, made in 2, 4, 6 and 8 cylinders, 5 to 175 horsepower. They are adaptable for Cruising, Racing, Fishing, Freighting. When you place a NIAGARA in your hull you are insured against engine trouble, as the Niagara Company has done all the necessary experimenting. NIAGARA MOTORS are as free from vibration as it is possible to build a motor, due to the fact that every crank has two large, high grade bearings to every throw and that no two cylinders fire at the same time; also due to the reciprocating parts being well balanced. Write for catalog.

NIAGARA MOTORS CORPORATION
522 Ellicott Square, BUFFALO, N. Y.



Model D 6, Niagara Motor, 6-Cylinder, 6¼" bore by 7" stroke

Do You Realize the Significance of These Facts?

FOR years the March Issues of the Boating Magazines have been Special Issues devoted to the sale of Boats. The March, 1917, Number of YACHTING was the leader in this field. It carried 14% more illustrated ads. of Boats-For-Sale than the next largest magazine in the field, and 17% more than the third in point of business of this class carried. Not only was the gain in the *number* of *advertisements*, but in the number of lines carried also.

Furthermore, YACHTING'S growth is shown in the steady increase in the amount of advertising *of all kinds* carried. The first quarter of 1917 shows a gain in advertising carried of 21¾% over the same period of 1916, and 52½% over the same period of 1915. This gain is more than that made by any other magazine in the field.

There Is a Reason!

Because YACHTING is known to reach the people who own and buy Boats of the Better Class.

Advertising Department
YACHTING
141-145 West 36th Street

Three Books on
NAVIGATION

which every man who wants to become an officer in the Coast Defence Reserve, or to have his provisional rating confirmed, should have:

PILOT WATER NAVIGATION
By Commander C. S. STANWORTH (U. S. NAVY) **PRICE $1.00**

Written from the yachtsman's standpoint, yet tells how it is done the "navy way." A short treatise for the use of yachtsmen on that branch of navigation that does not require nautical astronomy, or the use of sextant or chronometer.

NAVIGATION *for the* AMATEUR
By Captain E. T. MORTON **PRICE 80c.**

The most comprehensive book on the simpler forms of nautical astronomy ever published. Every yachtsman will need it if he goes out of sight of land. Particularly adapted for beginners.

SMALL BOAT NAVIGATION
By Lieut. Com. F. W. STERLING (U. S. NAVY) **PRICE 80c.**

A handbook on navigation for small boats along shore and for short runs out of sight of land. Covers all branches of navigation except nautical astronomy.

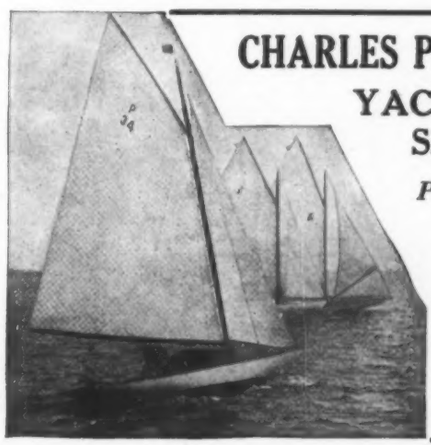
OUTING PUBLISHING CO.
141-145 WEST 36th ST., NEW YORK CITY

If you want to qualify in the
NAVAL COAST DEFENSE RESERVE

Spruce up on your navigation by reading
PUGSLEY'S EXAMINATION SPECIALTIES

Pugsley's GUIDE	Price, $2.00
Pugsley's NEW YORK PILOT	" 2.00
Pugsley's TIDES	" 2.00
Pugsley's DEAD RECKONING	" 2.00
Pugsley's LATITUDE BY MERIDIAN ALTITUDE	" 2.00
Pugsley's MULTIPLICATION TABLE	" 1.00
Pugsley's LOG BOOK	" 1.00
Pugsley's LEARNER'S COMPASS CARD	" .50
Pugsley's SEAMAN'S RECEIPT BOOK	" .25

Sold by YACHTING, 141-145 West 36th Street



CHARLES P. McCLELLAN
YACHT SAILMAKER

Patented ONE-MAN BOAT TOPS SIMPLICITY SPRAYHOODS, CUSHIONS, etc.

PRESIDENT AVENUE
FALL RIVER, MASS.
Established 1902

Consult YACHTING'S Information Department on any of your problems. Its service is absolutely free.

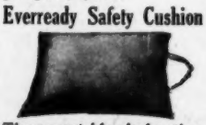
Ilanasilk Boating and Camping Equipment

Universal Safety Mattress Co.,
Dept. 14
31 Nassau St.
New York

Patrol Life Preserver
Designed for Mosquito Fleet

The only fiber-filled life preserver passed by the U. S. Steamboat Inspection Service *for all vessels.* Light, compact and handy. Supports wearer's head clear of water and adjusts to person of any size. Price postpaid, $2.75.

Everready Safety Cushion



The newest idea in boating equipment—a cushion with a life preserver inside. The life preserver is the only type approved by the U. S. Steamboat Inspection Service that supports the wearer's head clear of water. Filled with the ever-soft and buoyant Ilanasilk and covered with 8-oz. khaki-duck, snap-button, slip-on-cover. Price postpaid, $3.00.

Electric Row Boat Motor

Make your Row Boat an Electric Launch. Buy a Jewel Detachable Row Boat Motor run by electricity. No odor or dangerous gasoline. Simple, noiseless and powerful. Attaches to any Row Boat and runs on two six volt Batteries. This is our 5th successful season.

Open Window Battery

Look inside your storage battery through the patented open window. See condition of plates and height of electrolyte. If you need a new automobile starting battery buy a Jewel and save money. 6-60 Special $8.50.

MOTORCYCLE ELECTRIC LIGHTING SYSTEM

The Jewel Generator Motorcycle Storage Battery and complete lighting system is in great demand. Agents wanted. Write for prices and catalog us

JEWEL ELECTRIC COMPANY, 112 N. Fifth Ave., Chicago

High Grade Heavy Weight
TANKS

For Gasolene, Water and Air of any shape or dimensions desired for any pressure. We make only work of merit

"Light Competition Work Not Wanted"

Galvanizing of all kinds of marine work.

L. O. KOVEN & BROTHER
50 Cliff Street - - New York

UNDERLIGHTED COMPASSES

save eye strain in night steering. The electric bulb beneath card gives a soft diffused light with no reflection from glass as with a compass lighted from top. Makes night steering a pleasure. The reflection keeps the light focused on the point by which you are steering with no light elsewhere on the card to distract, confuse, or tire the eye. You don't mind your trick at the wheel with a "PERFECT" Underlighted Compass.

Cut shows Cole Bearing Finder attached to compass.

Send for Catalogue

MARINE COMPASS COMPANY
Box 40, Bryantville, Massachusetts

Carl Fisher's Suggestion for Increased Motor Efficiency

The following letter from that well known speed-boat sailor Carl Fisher is of extreme interest to everyone interested in the development of the marine engine and motor boats whether he is a manufacturer or prospective purchaser.

Mr. Fisher has had so much experience with the development of the automobile engine and has seen how much his professional racing among the manufacturers has done for that development that any suggestion of his carries weight. The present suggestion will bear close study by all those interested.

Most of the power plants the marine manufacturers are turning out now are a very long ways from being satisfactory to the purchasers. Some are a little better than others but there is absolutely no comparison between the workmanship on marine motors and the workmanship on automobile motors, regardless of the fact that the marine manufacturers get five and six times as much for a marine motor as the automobile manufacturers get for an automobile motor.

I have had in mind for some time a plan which seems to me might be of great advantage to the manufacturers of marine engines and boats in establishing a standard class boat with a given piston displacement in the motor, which would allow the building of a boat of 40 to 45 miles per hour speed, that could be used not alone for racing purposes but as a very fast runabout. I am inclined to say that I will give $10,000 each year for three years in order to create a standard class of racing and utility runabout that can be worked to gradually by all marine manufacturers in order to get a standard size and standard runabout that will give 40 to 45 miles per hour and at the same time be a boat that can be used the next day for fishing trips or a gentleman's roadster. I would be very glad to donate this sum providing the manufacturers will immediately get together and make specifications of a class, and providing the manufacturers will add $20,000 to my $30,000.

In my estimation this amount of money is sufficient to attract the attention of all marine and boat manufacturers. Unquestionably the winners and finishers will derive exactly the same benefits that have come to automobile manufacturers from track competition. The Indianapolis Motor Speedway has been responsible more than any other one thing in America for the rapid development of not only the automobile motor but every part of the chassis and construction. I can remember clearly that it is only six years ago when the ———— Company didn't have an automobile in their shop that would go three times around the Speedway, wide open, without getting into trouble; today this Company is turning out thousands of cars that can go around the Speedway at 60 miles an hour indefinitely. I can remember distinctly the time when there wasn't a single touring car built in America that could go at the rate of 60 miles an hour for six miles; today you can buy limousines—fifteen or twenty different makes—that with seven passengers can go 60 miles an hour, hour in and hour out, without giving trouble. And it is the same with tires: it is only the question of a few years ago that there wasn't a tire made in America that could stand 75 miles an hour on the Indianapolis Motor Speedway for 25 minutes without going to pieces; today you can buy tires that will go 500 miles through a race on the Indianapolis Motor Speedway at an average speed of 90 miles per hour, without a change. It was only a few years ago that you couldn't buy a spark plug that would stand 2,000 revolutions per minute for ten minutes; today you can buy spark plugs for fifty cents a piece that will stand this gaff. Practically all of these wonderful improvements have come from the enormous demand of competition and getting the brains of the engineers to work along the desired lines of requirements.

I don't think it would be worth fifty cents to develop a hydroplane or an engine that would only be light enough to go through one race and then be a wreck. My idea of a class would be about as follows: A restriction of between 24 and 30 feet long, from 5 to-8 foot beam, piston displacement that would be 1,200 or 1,250 cubic inches, unless some happier size could be arrived at by all the manufacturers. The specifications should call for a copper exhaust out of the stern transom but with a cut-out permissible, with a complete reversing clutch that will stand ten minutes continuous operation during elimination trials on a back-up gear with the engine at one-half revolution speed. The engine must be under hoods; there must be at least three water-tight bulkheads in the hull. There must be three days races on the Point system—the distances for the first year to be: 10, 15 and 20 miles; second year distances to be: 15, 20 and 25 miles; third year distances must be: 20, 25 and 30 miles. Fifty thousand dollars into three years would result as follows: $16,500 each year, which would be in prizes:

$8,000.00 for first, $4,000.00 for second, $2,000.00 for third, $1,500.00 for fourth, $1,000.00 for fifth.

Added to these figures would be, of course, a good many special prizes—for races of this kind would immediately assume great importance and there would be special prizes from the magneto, oil and spark plug people that would probably make each race a $20,000 race.

The size of the hull and piston displacement must be guaranteed for three years—that the races will be run for three continuous years without any change in the specifications of the hull lengths or piston displacement. There must be a standard size and carrying capacity gasolene tank installed in each boat.

With these specifications you get down to three points—construction, design and motive power: and I firmly believe, if these races are carried through, that it will be the biggest thing that can happen to the marine motor game. There are literally hundreds and hundreds of people who will be glad to pay $7,500 apiece for runabouts of this type—and there is no reason in the world why these boats cannot be made for $7,500. I will guarantee to build two boats of this type at Miami for this class, if the manufacturers and those interested are willing to go ahead with this program. There is an enormous amount of sport in a 40 or 45-mile runabout—but I can't see where you could stir up any enthusiasm over an 18-mile, 21-foot long boat with 20 H. P. I wouldn't have one as a gift and I don't think that the average man who wants action would care for one of them.

I must make as a condition of my subscription that the races be held in Miami in the Winter season for the reason that this is the time to attract attention and the time when the manufacturers can get away; for the further reason that the only grandstand to accommodate a large crowd is in Miami, and that the largest number of people can be within a quarter-mile of the contestants. These races shall be held on a two-mile, semi-circular course: this will not give the last ounce of speed obtainable but it will give the spectators and those who are prospective purchasers a chance to get enthusiastic over motor boat racing and a chance to really see a race.

Racing for cash prizes of this kind necessitates putting the racing immediately into professionals' hands—and certainly this is where it belongs. If you are going to make good engines and have them run under rules of this kind, certainly you don't want a man to enter a boat of this kind on Tuesday and decide on Thursday he is going fishing with it, and you don't want him to enter Thursday and because he has had some little trouble which made him finish last, tear the engine apart and quit.

In my estimation there is a great demand for high-powered boats of this kind for marine protection from submarines—and the quicker we can develop this type of boat in America, the better off we will be. There will be quite a demand for boats of this class from manufacturers, providing they are substantial and reliable—and I have this very largely in mind, as well as the sport, when I suggest and am willing to donate $30,000 to the cause. A race of this class would be quite sensational with ten or fifteen entries, and quite enjoyable to look at—and I believe we could get a very good crowd, which would result in sufficient funds to more than pay for the advertising and miscellaneous expense.

Now; if there is any way to get the manufacturers together on this proposition, go to it. It isn't worth while for them to quibble on the amount which I ask them to put up—if they won't put up this much, you can forget it; nor the place of racing nor the time. I, myself, expect to spend in development, as I have suggested, an additional fifteen or twenty

thousand dollars, if the race is decided upon, in building two boats that I would enter—and I think that I could help other manufacturers sell several boats of this class for these races.

Yours very truly,
(Signed) CARL G. FISHER

How to Build a 16-Footer

(Concluded from page 271)

Hardware List Sixteen-foot Knockabout

All hardware can be either galvanized or brass according to owners desires. If galvanized fittings are used the cost will be about $20.00.

Two ¾" eye blocks.
Two ¾" cheek blocks.
Two jib sheet fairleaders.
Six 4½" cleats.
Two 6" cleats.
One 15" traveller with nuts and washers.
One goose neck for 3" mast.
One gaff jaw for 3" mast.
Two 4" mast hoops.
Two ¾" eye chain plates.
One ¾" eye deck strap.
Three ¾" eye turnbuckles.
Four ¾" thimbles.
One dozen small size jib snap hooks.
Two 4½" bow chocks.
46 feet 3-16" wire rope.
200 feet ¾" diameter manila rope.
3 dozen ⅜" grommets.
1 ball yacht marlin
1 pound light cotton twine.
1 set rudder gudgeons and braces.
5 lbs. 1½" galvanized boat nails.
1 gross 1½" No. 12 galvanized screws, flat head.
1 quart copper bottom paint.
1 gallon yacht paint.
¼ gallon spar varnish.
1 pound putty.
1 pound white lead.
25 square yards cotton drill for sails and deck.

Balance of Specifications for 16-Footer

Decking—The decking is to be ½-inch cypress or cedar, fastened to the frames, deck beams and clamps with 1½-inch galvanized boat nails. It is afterwards to be covered with canvas laid in white lead. If desired the decks can be laid more carefully and finished bright. In this case they will have to be calked and smoothed. The canvas covering is to be preferred for general usage.

Mast and Spars—The spars are all to be made from the finest quality clear spruce. The dimensions are all given in the detail drawings.

Rudder—The rudder is to be a clear piece of oak or yellow pine ¾ inch thick and shaped as shown. The after edge should be bevelled and rounded as well as the forward edge below the water line.

Tiller—The tiller should be of oak, cut from a stick 1½ inch thick, 3 inches wide and 6 feet long. The portion passing over the rudder head is to be as shown in the detail.

Moulding—The sheer is to be protected by an oak half round, full length and 1¼-inches wide. It is to be screw-fastened at the ends and nailed the rest of the way. It is to be put in place after the canvas decking has been stretched and will serve to cover the row of tacks holding the latter.

Gadfly

(Concluded from page 261)

connects to the pantry in the after end of the deck house. Next forward is the engine room, having watertight bulkheads fore and aft. Forward of the engine room are the officer's and crew's quarters with stateroom for the captain, engineer and steward.

The deck house is 46 feet long, with pantry in the forward end, the dining room about 16 feet long, arranged with extension tables, sideboard, buffet, etc., the rest of the space is taken up with a social hall, or living room. The bridge is fitted on top of the deck house.

The decorations and furnishings are of the French period, pure in style but designed to create an atmosphere of comfort and homelike charm so much to be desired and so often lacking in our finest pleasure craft. The color scheme is light, mahogany and other dark wood effects being carefully avoided.

The propelling machinery of this vessel consists of two of the latest design, 6 cylinder 6½ by 9 inch Winton motors, of 75 H. P. each, which will drive the vessel at a speed of 12 to 13 miles per hour. Gasoline tanks are of large capacity in order to give the boat a good cruising radius, and ample fresh water tanks are provided.

GREAT LAKES BOAT BUILDING CORP.
Designers and Builders of Boats of Distinction and Quality
MILWAUKEE WISCONSIN

YOUR BEST INSURANCE IS A
Fairhaven Bulb Shank Mooring
WRITE TO THE
Fairhaven Iron Foundry Co.
FAIRHAVEN, MASS.

THE HOLLOW SPARS
Used on most all American and foreign racing yachts, are made by the Pigeon-Fraser Hollow Spar Co., makers of all kinds of spars for yachts, working vessels, or ice boats. Either Hollow or Solid.
Pigeon - Fraser Hollow Spar Co.
East Boston, Mass.

PARAGON
REVERSE GEARS
for the highest grade motors
PARAGON GEAR WORKS TAUNTON, MASS.

YACHT CLUBS
Get Wise
Lay around your boats and floats condemned fire department hose; also second-hand wire rope.
I have five hundred second-hand convas covers for sale
E. J. KANE, 59 Ann Street, New York, N.Y.

STICKS TO THE RIBS
Yes sir! One can of this wholesome, appetizing, ready-cooked canned food is a *big meal* for two hungry men when fishing, hunting or trapping, or anywhere in the great outdoors—good out of the can cold—better hot.
—for that hungry feeling
FULL-MEAL
Solid Food, Easy to Carry, Always Handy
This combination of fresh beef, selected vegetables and seasoning fills the bill and can be used in many ways—baked, sandwiches, stew, soup. Recipes on the label.
Your grocer will supply. If not, send us his name and your address, enclosing 25c for full sized can, parcel post prepaid.

The Haserot Canneries Co.
Dept. R. Cleveland, O.